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Original Articles

THE TUBERCULOSIS MOVEMENT

RECENT OBSERVATIONS WITH REFERENCE TO CERTAIN CLINICAL ASPECTS *

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DENVER

Tuberculosis, of all communicable diseases, has in the past decade enlisted the best efforts of medical workers in all civilized countries. There have resulted laborious scientific research, detailed clinical study, effective organization for its control, valuable investigation of a sociologic and economic nature, and an almost inexhaustible supply of literature. In view of the innumerable factors inherent in a problem of such magnitude, it is impossible here to attempt a consideration of other than a single phase to which my attention of late has been directed.

Unusual opportunities for comparative observation sometimes affording approximate accuracy of conclusions are given to physicians residing in favorable climates. From an experience of eighteen years in Colorado, I venture to allude to certain recent tendencies of the profession with reference to a disease in which unfortunate results are often quite conspicuous.

It is evident that a most frequent disease concerning which serious errors of diagnosis and treatment seem almost impossible, continues, nevertheless, to present grievous difficulties in its early recognition and rational management. That this should be true in view of the active educational propaganda appears remarkable. A scrutiny of conditions, however, discloses the fact that to some extent, paradoxic as it may seem, the campaign against tuberculosis has been indirectly responsible.

CONSERVATISM VERSUS MEDICAL FADS

Following the greater impetus to the tuberculosis movement and the added incentives for clinical proficiency, there has apparently developed a growing inclination toward refinements of diagnosis and conventionalities of treatment. In the midst of the present enthusiasm regarding the new methods of diagnosis and the advantages of the sanatorium is there not manifested a disposition to exalt the practical utility of several diagnostic and therapeutic agencies to a point far above their true value? A just and well-proportioned estimate of the relative importance attaching to some clinical features may not always be entertained if judicious conservatism is opposed by prevailing medical fads. In the same way efforts to develop a comprehensive and effective system of prevention must fail of the fullest success unless cognizance is taken not only of fundamentally important factors, but also of all possible negative phases. To determine their legitimate scope it is as essential to avoid an exaggeration of their advantages as to admit their value within proper limitations. Thus, while institutions for the care of tuberculous invalids are demanded to satisfy individual and social requirements in the cause of prophylaxis, their overwhelming value in therapeutic management and their unvarying applicability to all classes and conditions have not so far been subject to demonstrable proof. Although a vitally important factor in the general problem of tuberculosis, the practical usefulness of the sanatorium consists largely in its coordinated relation to other valuable measures of prevention and management.

It is well to inquire to what extent, if any, as a result of the increasing interest in tuberculosis, pulmonary invalids are profiting by earlier diagnosis and more prompt recourse to favorable climates. My recent experience has been materially different in some respects from that of previous years.

EARLY DIAGNOSIS

In the past a serious reflection has been the delay in recognizing the disease, occasioned in many instances by an incomplete review of the history, a superficial inquiry regarding the subjective symptoms, an inadequate and hasty examination, and failure to examine the sputum. Errors of diagnosis were not then referable to the absence of *x*-ray equipment, lack of familiarity with laboratory technic, the impracticability of utilizing guinea-pigs for animal experimentation, or of employing tuberculin in subcutaneous injection. In the majority of instances the simpler means of diagnosis were sufficient to have warranted a much earlier recognition of the disease. Many patients were sent to health resorts only when the disease had become most active and extensive, months after a diagnosis of malaria, bronchitis, typhoid fever, influenza or catarrhal laryngitis had been made. I have previously reported that in a series of 2,300 patients the average period of delay following the recognition of the disease before arrival in Colorado was eighteen months.

SOME CLINICAL FINDINGS

Among the last 313 invalids coming under observation since the compilation of other statistics, the physical examination of the chest was entirely negative as regards tuberculosis in 90 instances, or more than one-quarter of the total number. Bacilli were not found in the sputum in 87 cases. They were occasionally recognized, however, in the absence of physical signs of tuberculous involvement, and *vice versa*. Of the doubtful cases without either physical or bacteriologic evidence of tuberculosis a tuberculin test was negative in 41; 87 presented a vague, ill-defined history of indisposition with suspicious subjective manifestations during from two

* Read before the Chicago Medical Society, Nov. 3, 1909.

weeks to four months. Notwithstanding the short duration of these cases, it is of interest to note that the average period of delay for the entire 313 patients is sixteen and one-quarter months, which is nearly as large as that previously reported. This is explained by the fact that, despite the unusually large number of doubtful cases, 125 patients, or about two-fifths of the entire group, were found on arrival to be in advanced stages. That the condition was truly desperate in so large a number is shown by the death of 62, although the period of observation has been comparatively short. Sixteen individuals were sent home as utterly hopeless cases. It thus appears that out of 313 new arrivals 90 are classed as doubtful and 125 as very advanced, leaving a relatively small number exhibiting definite infection of incipient or moderate degree.

On the basis of the physical examination, bacteriologic findings and tuberculin test, 41 patients are adjudged non-tuberculous. Among a somewhat larger number the previous diagnosis was justly subject to suspicion, there being no substantial confirmation of an active tuberculous infection, although in some instances a positive cutaneous reaction had been obtained. The condition was apparently chronic bronchitis with or without emphysema in 14 instances, non-tuberculous bronchiectasis in 4, pulmonary abscess in 2, pleural effusion in 4, empyema in 1, pericarditis in 1, probably pulmonary syphilis in 2, tuberculosis of the peritoneum in 4, tuberculosis of the intestine without pulmonary infection in 3. Of the remaining cases without physical or bacteriologic evidences of tuberculous pulmonary involvement, the symptoms were largely those of anemia, neurasthenia and recent bronchitis without material loss of weight or elevation of temperature.

Among the clearly tuberculous cases, nephritic complications with albuminuria were present in 25 instances and incurable infection of the larynx in 15. Intestinal tuberculosis was demonstrable in 7; 29 had been treated for somewhat prolonged periods for supposed typhoid fever or malaria, while 19 exhibited a distinct pneumonic onset, and in 12 of these the disease pursued the characteristic course of acute pneumonic phthisis. A considerable number reported that the condition had been regarded as catarrhal or tuberculous laryngitis, local applications having been applied during a period of many months, although no visual appearance of laryngeal involvement was subsequently exhibited. Several cases of many years' standing conformed strictly to the fibroid type. Patients with marked shortness of breath from extensive emphysema and beginning cardiac dilatation were occasionally observed.

CORRECT INTERPRETATION OF PHYSICAL SIGNS

It was, perhaps, to have been expected from previous observations that many cases would represent either advanced stages of the disease or important complications. That so large a proportion exhibited doubtful or negative evidences of tuberculosis has been a source of considerable surprise. Had my experience in this respect been radically different from that of local confrères, I might be forced to acknowledge a personal deficiency in physical diagnosis as the primary factor. Inasmuch, however, as other clinicians in Colorado have noted the same discrepancies, it is fair to assume that at least a partial explanation may be found in attempted over-niceties of diagnosis.

While the tendency toward greater skill in physical examinations is assuredly to be commended, a note of warning may be sounded lest, in our enthusiasm for that which is new, due importance be not attached to the old-fashioned methods without which positively accurate results are often unattainable. Correctness of interpretation is often quite as essential in the problem of diagnosis as a keen recognition of somewhat obscure physical signs. Logical deductions must be based on a comprehensive and selective review of all clinical and laboratory data, rather than on a single objective manifestation of uncertain significance. In the formation of positive conclusions a wise discrimination is necessary regarding the relative importance and frequency of the various physical signs of incipient tuberculosis. An appreciation of their comparative value is not always afforded when efforts are directed largely to the perfection of ultra-refined aspects of diagnosis. Some thought to be characteristic of the disease are inconstant and others devoid of definite meaning.

For practical purposes a working familiarity with the more common signs, and their grouping in connection with suggestive facts pertaining to the history and symptoms, are more necessary for the general practitioner than attention to features of exceptional occurrence, difficult recognition and doubtful import. That physicians in some instances are prone to find too much on physical examination is evidenced by the multiplicity of detail sometimes reported with reference to the finer shades of respiratory sounds in different regions of the chest.

It is impossible here to discuss at length the merits of the slight modifications of normal vesicular respiration occasionally recognized at a very early age, or to review the diagnostic value of deviations from normal apical percussion outlines of clinical interest in cases with moderate involvement.

In the presence of tiny foci of infection it may be difficult to appreciate visual changes in the contour or movement at the apex. Palpation at such a time may also fail to disclose a retardation or deficiency of the inspiratory expansion. Even a well-defined variation from the normal percussion boundaries may not be indicative of tubercle deposit. In cases with moderate infection it is not invariably pronounced, and at an incipient stage is usually absent altogether. The accurate determination of resonant borders in early phthisis is an accomplishment not easily acquired save by constant practice. Krönig has called attention to a typical condition of the lungs found in some patients with nasal obstruction. He reports a fibrous induration with collapse and shrinkage of the apex as the result of the inhalation of dust by such individuals. In spite of the percussion signs suggesting tuberculosis, this may be excluded on the basis jointly of the clinical course, the negative bacteriologic findings, and the failure of the tuberculin reactions. Philip, of Edinburgh, deprecates the want of refinement in percussion methods, and calls attention to a certain adaptation of this means of diagnosis called "tidal percussion." This consists of percussing alternately during expiration and full inspiration in order to determine the limitation of tidal movement and ascertain the degree of functional activity. While recent clinical observations have tended to corroborate the advantages said to be acquired by the application of this method in some instances, the fact remains that its significance is subject to considerable variation.

AUSCULTATORY SIGNS

Inspection, palpation and percussion are often available for the recognition of long-standing tuberculous processes, and are occasionally of contributory value in

cases of recent infection. In general practice, however, the diagnosis of incipient phthisis will be made in most cases through recourse to auscultation. As a rule, in cases of recent infection the evidence to be derived by this method relates to the detection of fine, adventitious elements more than to definite changes in the pitch, quality, rhythm or intensity of the respiratory sounds. It has been my observation that the auscultatory signs of chief importance in early tuberculosis consist of faint, scarcely recognizable clicks, at the end of inspiration following a cough, sometimes without pronounced modification of respiratory sounds. They are often obscure if the cough be too violent or the inspiratory effort unduly vigorous. While especial significance attaches to the presence of unilateral râles at the apex, a not uncommon and sharply localized site of their occurrence may be under the clavicle, in the axilla, and in the upper interscapular space frequently opposite the spine of the scapula. I have occasionally recognized very tiny, semidry clicks in the interscapular region without other physical evidence of the slightest tuberculous involvement either in this region or at the apex.

In emphasizing the vast importance of râles as a factor of diagnosis, due cognizance is taken of the conflicting opinions entertained by other observers. Some regard a roughened breathing, variously termed "cogwheel," "harsh," "rude," "interrupted" and "granular" respiration, as of paramount value in the early determination of tuberculous lesions. Turban regards the so-called rough breathing as one of the most important changes of the normal breath sounds. He distinguishes this from ordinary vesicular respiration "in that it appears to be composed of a series of sounds in rapid succession." Grancher alludes to this anomalous form of respiration and calls attention to the absence of softness or smoothness. He describes a harsh respiration, which may be dry, hard or rasping, with or without adventitious sounds, and occurring both in inspiration and expiration, especially the former. Turban, Grancher and Dettweiler have ascribed the origin of rough breathing to a partial obstruction of the finer air passages. It is, of course, readily conceivable that an initial tubercle deposit may encroach on the finer bronchioles to such an extent as to render the air channel narrow and uneven. A slight obstruction of the air current produced by the localized congestion of the mucous membrane in tiny bronchial ramifications may modify the character of respiratory sounds sufficiently to suggest their designation as "rough," "harsh," "interrupted" or "sticky." Sahli believes that this form of breathing is attributable to the presence of secretion in the bronchioles. He states: "When these added sounds can be distinctly differentiated as such from the breath sounds, we speak of râles; if not, they merely give an impure, rough character to the vesicular breathing."

It is apparent that the same sound may be variously interpreted according to the understanding and experience of examiners. It may remain largely a matter of personal equation whether or not the breath sounds in certain instances may be designated as merely impure and roughened or of the vesicular type supplemented by adventitious sounds. In making case records it has been my custom for many years to define apical sounds more or less analogous to what some would term rough breathing as "very fine, semidry râles." Their distinct recognition, of course, justifies their inclusion in the category of râles, although they are quite different in character from the crackling or bubbling adventitious sounds so common in tuberculosis. Roughness of the breath sounds as contrasted with the ordinary smoothness or softness of the respiration is undoubtedly of some provisional diagnostic value in obscure cases. The significance, however, of these modifications of normal breath sounds, including feebleness of respiration, appears decidedly inferior to that of localized râles which are so frequently overlooked. As the descriptive appellation "harsh" is used synonymously with sharpened, puerile breathing relating strictly to an increase of intensity, it is apparent that to avoid confusion this term should not designate the impure vesicular respiration of early phthisis.

INTERPRETATION OF HEMORRHAGE

The diagnostic significance of pulmonary hemorrhage is sometimes subject to erroneous interpretations. A hemorrhagic onset of tuberculosis is not uncommon even without previous subjective symptoms or physical signs. A strong suspicion of incipient tuberculosis is, therefore, awakened by the occurrence of hemorrhage in individuals of apparently robust health. If, however, there are associated loss of weight, elevation of temperature and cough, although without physical signs, a provisional diagnosis of tuberculosis may be warranted. In the absence of definite physical evidences it is important to eliminate all other conditions possibly responsible for hemoptysis. A moderate number of hemorrhagic patients have been observed who presented every apparent subjective indication of pulmonary tuberculosis, yet the bleeding was found dependent on other causes. I have elsewhere reported instances of cardiac disturbance, including mitral disease, a dilated and hypertrophied right ventricle, cases of purpura hemorrhagica and vicarious menstruation, illustrating the danger of mistakes in diagnosis through incorrect interpretations of recurring pulmonary hemorrhage.

Pulmonary syphilis and chronic influenza are not such infrequent causes of erroneous diagnosis as might perhaps be expected. The clinical manifestations and even the physical signs may resemble so closely those of pulmonary tuberculosis as to preclude their differentiation save on the basis of the bacteriologic findings or specific tests.

MANAGEMENT OF PATIENTS

To resume the summary of the cases recently observed it may be stated that several invalids presented the history of a six months' or one year's sojourn in local sanatoria, and some reported an attempted enforcement of the so-called "sanatorium régime" outside of institutions. Many had been informed by their medical attendants that the disease could assuredly be arrested at home, that climate was of no avail, and that tuberculin therapy was of undoubted efficacy as a routine measure of treatment. A large number had been subjected to this, and a few to medication with the various vaccines. The extent to which the mercury treatment had been employed is also worthy of note. Superalimentation had occasionally been enforced, regardless of digestion, circulation or elimination. Fresh air had often been sought even at the expense of fatigue, the necessity of rest in addition to outdoor living not always being recognized as essential. Varying degrees of exercise had been permitted or demanded, irrespective of the temperature or pulse. In many cases attention to the smaller details of therapeutic management had been strangely lacking, although much greater insistence had been made than in former years on the observance of precautionary measures.

Almost without exception patients had been instructed with reference to the necessity of rigid compliance with hygienic rules. In general, emphatic attention had been called to the responsibility devolving on the consumptive to safeguard the interests of others. Not infrequently, accompanying members of the family were found in a state of anxious trepidation from the fancied dangers of exposure, notwithstanding a proper disposal of the sputum and the maintenance of the utmost cleanliness. Laudable as have been the personal efforts in the cause of prevention, it has occasionally appeared that a higher regard was exhibited for the preservation of others than for the protection and restoration of those already afflicted. In one instance, a young woman of neurotic type with moderately advanced phthisis was advised in detail as to her obligation to society, but received almost no information concerning the conservation of strength and the proper individual application of the principles of daily living. In other cases of incipient type the hygienic and dietetic management had been elaborated to such an unnecessary degree as to result in the later moral incapacitation of the invalid. Habits of idleness were engendered which at a later time had been extremely difficult to overcome. An aversion to employment of any kind is not uncommonly noted among individuals who have been subjected for prolonged periods to the demoralizing and degenerative effect of protracted indolence.

The important educational influence accruing from residence in institutions for consumptives has sometimes been perverted to such an extent as to render the patient difficult of subsequent management. Preconceived ideas as to the possible gravity of the condition, the avoidance of drugs and the relative value of various therapeutic procedures have often become a source of considerable embarrassment in the treatment of the clinical manifestations and in the resourceful control of the tuberculous individual. An unreasoning prejudice against the administration of any medicine whatever is somewhat in vogue. In consequence it is sometimes hard to overcome the scruples of phthisical patients against the judicious administration of remedies to control untoward symptoms. Invalids trained to the doctrine of medicinal nihilism are not inclined to yield a ready assent to the employment of appropriate medication even for the suppression of pulmonary hemorrhage, the restoration of disordered digestion, and the relief of various disturbed functions.

There has been displayed at times an unfortunate neglect to observe the importance of an appropriate social environment. The quiet régime of invalidism has often been found seriously disturbed by accompanying members of the family, and particularly by the presence of little children. While in some cases a discreet and intelligent companion may aid in promoting the comfort and contentment of the invalid and insure a more faithful compliance with instructions, it is impossible to overestimate in others the injury inflicted through the absence of tact, perversions of judgment and obliquities of disposition. Children, through the necessity for added care and the greater difficulties in securing suitable accommodations, incumber to no small extent the progress of tuberculous invalids. While so delicate a matter must remain a subject for careful individualization, experience has shown that in the majority of cases the most satisfactory results are attained by the segregation of the patient. That so many children have been permitted to accompany their parents in search of health is perhaps worthy of comment.

A considerable number of patients have presented the history of a severe pulmonary hemorrhage immediately preceding their departure from home. Not infrequently this has been followed by recurrences *en route* and during the first few days in Colorado. It is found that a rather large proportion of the hemorrhages observed are but repetitions of an initial hemorrhage experienced shortly before arrival. While approximately but one-fourth of all invalids may be expected to exhibit a recurrence in Colorado, this proportion would be materially diminished were patients cautioned to defer their journey until the tendency to hemorrhage had been suppressed.

SENDING INDIGENT PATIENTS TO HEALTH RESORTS

Attention has been called by various writers to the undesirability of sending indigent consumptives to health resorts. While emphasizing the folly of permitting destitute invalids who are hopelessly advanced to experience inevitable hardships, a difference of opinion may well be entertained as to the expediency of restricting the importation of those not absolutely impecunious. Under certain conditions of supervisory direction a limited financial status is no insuperable obstacle to recovery. Despite embarrassed resources, final success may be achieved as a result of unusual opportunities which cannot always be attained at home. This subject is worthy of more extended consideration than is possible at this time, but attention may be called to the importance of ascertaining accurately in advance as to the expense necessary to provide proper accommodations, and to the likelihood of obtaining light out-of-door employment for those with incipient infection and dependent on their own efforts for support. That such process of reasoning is not always applied is shown by the history of a clergyman with his wife and four children reduced to the point of abject penury. He had been prevailed on to resign from a sustaining parish and seek a new field of labor in Colorado. Although contributions had been sufficient to meet the expense of transportation, no provision was made for subsequent care. The possible suffering, however, was mitigated to a degree by the fact that the general condition was excellent and the physical and bacteriologic evidences entirely negative. No response was obtained to the ocular tuberculin test.

Apropos of the foregoing considerations the brief report of the following case may be of interest:

> A young man immediately on arrival in Colorado presented a letter of introduction from an acquaintance stating that the invalid on account of the advanced stage of the disease had been denied admission to a well-known state sanatorium. A request was made that he should be cared for without expense and assisted in securing a position. The young man was exceptionally well nourished, without fever or other symptoms suggestive of tuberculosis other than the history of a slight chronic cough which had been subject to occasional exacerbations during the fall and winter months. Examination of the chest was negative, as was also the sputum. There was no response to the tuberculin test. It was ascertained that he had been examined by the medical superintendent of a state sanatorium, who submitted to him the following in writing: "The report of your examination yesterday afternoon shows your case to be moderately advanced and suitable for admission when we have vacancies for cases of this class. At present the sanatorium is full and we have many accepted applicants waiting. I beg to state that I should think the climate of Texas or California would be very suitable to your case."

Even on the assumption that an accurate diagnosis had been established, the unqualified statement regarding California or Texas was, to say the least, somewhat indefinite, if not equivocal. The folly of such direction is appreciated when one considers the enormous area included within the limits of what was described as an appropriate climate. Bearing in mind the vast divergence in climatic conditions it is conceivable that on the basis of the information imparted the youth

might be expected to profit as well in the heat and humidity of Galveston as in the dry and rarefied atmosphere of El Paso, or in the rainy, foggy districts of California, as in the southerly mountainous regions. If the diagnosis had been correct, the advice as given was radically incomplete. Fortunately, no more serious consequences were involved than the despair incident to the alleged advanced infirmity, the disappointment resulting from the loss of a position, and the expense involved by a trip across the continent.

DEDUCTIONS

Speaking broadly, an analysis of the cases observed during the past year discloses a few significant facts. It is shown that in the present zeal to recognize tuberculosis at an early period an increasing number of patients are hurried to sanatoria or health resorts on a mere suspicion of the infection. Patients without well-defined constitutional symptoms or physical signs are thus subjected to great hardships incident to change of residence, loss of business, separation from family, and other deprivations. It is well known that in many sanatoria an absolute diagnosis is often quite impossible, as approximately 50 per cent. of the inmates do not have tubercle bacilli in the sputum, while very many are without loss of flesh, elevation of temperature, or acceleration of pulse.

It is also clear that for other patients disastrous delays in seeking climatic aid are occasioned by the enthusiasm of medical attendants relative to the supposed advantages of treatment in back yards. In view of recent observation it is impossible to avoid the conclusion that faith in the curability of tuberculosis at home is responsible in large measure for the desperate condition of many consumptives who finally make the journey to a distant clime.

Evidence is not wanting to suggest that rational ideas of management are not always entertained concerning a class of people demanding the greatest conservatism and stability of judgment. Not only are misconceptions sometimes exhibited relative to the efficacy of rest, discretion in diet and caution in specific medication, but delusions as well regarding the value of climate in properly selected cases. Were an unreasoning prejudice replaced by a more accurate knowledge of the various climatic attributes which are capable of producing a direct influence on the organism, much of the wretchedness and disappointment resulting from injudicious advice would assuredly be averted.

Waiving any discussion concerning the comparative merits of the sanatorium and a wisely directed climatic change, it may be submitted that patients in comfortable circumstances should receive such advice as will offer the most favorable opportunities for a speedy restoration to health. It has been amply demonstrated that a large proportion of patients in the incipient stages, through proper methods of living and supervision, may secure an eventual arrest of the infection. It has also been shown by autopsy investigations that this occasionally takes place as a result of inherent individual resistance, notwithstanding unhygienic surroundings, excessive exposure and improper food or clothing. While in many early cases the patients are likely to exhibit gratifying improvement without recourse to change of climate, it does not follow that all patients in incipient stages can achieve a complete and enduring arrest, although the balance may be turned temporarily in favor of recovery. On the other hand, despite strict conformity to a suitable régime at home, procrastination in seeking climatic aid is often attended by unfortunate results.

The choice of climate should resolve itself in all cases into a question of individual fitness. The peculiarities of temperament, the widely differing pathologic processes, the degree of functional disturbance, and other important considerations, emphasize the importance of the utmost discrimination in the matter of climatic selection. This should be adjudged for each pulmonary invalid strictly on the merits of the case, with full cognizance of the import attaching to all modifying circumstances.

It is essential that consumptives, regardless of their status, should be duly impressed by their local physicians with the necessity of conforming to systematic management. That highly improper instructions have been given in so many cases seems almost incredible.

In May of the present year I received the following letter from an inmate of a sanatorium in another state: "I am a patient of Dr. ———, and he advises my trying Estes Park for the summer. He has referred me to you for information regarding the accommodations." In my reply attention was called to the fact that it would be impossible to give detailed advice without definite knowledge as to his individual needs and requirements. A few weeks subsequently the patient reported in person that he had been instructed to consult me solely with reference to accommodations; that his medical adviser had imparted full information as to his condition, and that a physical examination or medical supervision during the summer months was unnecessary. The patient was much emaciated, markedly dyspneic, with pronounced elevation of temperature and greatly accelerated pulse, and yet contemplated, under the advice of his physician, a sojourn in an altitude of 7,500 feet. It was ascertained that for six years the patient had remained under the care of the same medical attendant and exhibited at no time evidence of material improvement. There had been a loss of twenty-eight pounds in weight, a daily elevation of temperature of 100 F. or over, and constant shortness of breath. Despite the occurrence of several hemorrhages, tuberculin had been given during a continuous period of two years, a maximum dose having been reached of 650 milligrams. It was stated to the patient that the results were eminently satisfactory, but that a temporary change to a higher elevation was desirable.

Some significance attaches to the fact that similar errors of diagnosis and treatment have been perpetrated not solely by general practitioners (as might have been supposed), but also by those whose opportunities and equipment should have precluded such possibility. It has been my observation that in the majority of cases the family physician has not shirked his responsibilities in the treatment of pulmonary invalids. Others through literary contributions have accomplished much good in arousing the interest of the profession and in spreading the cause of education among the masses.

Laboratory opportunities and equipment, an aptitude for sociologic study, administrative qualifications and years of scientific research, no matter how capable and conscientious the individual, do not always render him a skilful clinician. A satisfying direction of the pulmonary invalid in individual instances may require of the physician more than skill in diagnosis or familiarity with modern therapeusis. For the wise preliminary guidance of these patients the necessary qualifications are manifold and most exacting. Comprehensive attention to special indications representing questions of personal

equation is sometimes possible only by dint of much interested effort. It is primarily essential to conduct a careful investigation not only of all phases of the disease, together with its possible complications, but also of all factors pertaining to the patient, including temperamental proclivities, financial resources, domestic relations and social tendencies. Only from a critical analysis of the various features relative to the invalid and an infinite regard for detail may the general principles of treatment be applied to the best possible advantage. While an aptitude for work of this character may not always be expected of busy practitioners, it is nevertheless fitting to emphasize its importance that the interests of consumptives may be more fully subserved. Finally, in the diagnosis and management of tuberculosis it is well to follow the scriptural advice, to "prove all things; hold fast to that which is good."

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MODERN ANTISEPTIC SURGERY

AND THE RÔLE OF EXPERIMENT IN ITS DISCOVERY AND DEVELOPMENT *

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The subject naturally divides itself into three parts: (1) the conditions before the introduction of the antiseptic method by Lister; (2) the means by which his system was discovered and developed, and (3) the conditions existing after the introduction of the method, i. e., at the present time.

My surgical life covers all three of these periods since I graduated in medicine in 1862, some years before Lister began his work. I have, therefore, fought my way from the horrors of the preantiseptic days up to the delights of the present antiseptic days.[1]

I. THE PREANTISEPTIC PERIOD

In my early surgical experience every accidental wound and every surgical operation (that is, an intentional wound) was followed by inflammation and suppuration, i. e., the discharge of "pus" or "matter." This was not only constantly expected as an unavoidable process of Nature and believed to be needful for healing, but was constantly realized. Hence the pus was called "laudable" pus! How well I remember forty years ago at the beginning of each winter's session when I was the assistant of the late Professor Samuel D. Gross, his turning to the orderly and saying to him, "To-morrow, Hugh, I shall lecture on suppuration. Go over to the hospital in the morning and get a cupful of pus for my lecture." Pus, mark you, was always "on tap," so to speak, though the little hospital contained only a dozen beds!

Perhaps the best way to give the reader an idea of wound conditions at that time will be to describe an ordinary operation and its results. We will suppose that it is an amputation. The surgeon approached the operation with the clean hands of a gentleman. He usually wore an old coat covered with dried blood spots from previous service. His finger-nails very likely were long and no special attention was given to them. The instruments were taken out of a velvet-lined case and were as clean as ordinary table-knives would be. The operation was done without any preliminary cleansing of the skin other than to remove any visible dirt. If the knife happened to fall on the floor it was picked up, rinsed in a basin of ordinary water and used as it was. The marine sponges then always used were washed clean in ordinary water and used over and over again even after being saturated with foul pus. The blood-vessels were tied with ordinary silk; one end was cut short, the other one hung out of the wound. After an amputation of a fleshy thigh I have often seen 25 or 30 such "ligatures," as they are called, gathered into two bundles, one at each end of the wound. The flaps were then sewed together with an ordinary needle and thread and the stump dressed first with an old rag (which, however, would be ordinarily clean) or scraped lint spread with some simple grease. Over that would be placed some other rags, lint, cotton, or other dressing, and finally a bandage. During the Civil War these greasy dressings gave place to simple cold-water dressings.

By the second day the patient would begin to have considerable fever. By the third or fourth the temperature would rise to what we now know (for medical thermometers were not in general use in that early day!) to about 103, 104 or 105 F. Then we would poultice the wound. Every few hours the patient would be disturbed, a new poultice put on to replace the old one, now cold, foul and ill-smelling, and by this time bathed with pus. I have often seen the pus escaping by the tablespoonful and the wounds alive with squirming maggots resembling chestnut worms. By this time also it was hoped that the silk ligatures, with which the arteries had been tied, had literally "rotted" loose and each one of them was gently pulled on to the discomfort of the patient. Care was taken that the ligatures with knots tied on them (in order to distinguish those that secured the large blood-vessels) should not be pulled on severely until probably the tenth or twelfth day. Meantime the patient was tossing about the bed with pain, with thirst, without appetite, without sleep except such as morphin would secure. This at the same time dried up all the secretions, producing constipation and other evils.

By about the tenth to the fourteenth day, suppuration having been fully established and quantities of pus pouring from the wound, the fever would subside and the wound would begin slowly to heal. Of course, the healing could not be complete so long as the silk ligatures were still protruding from the wound. Sometimes they did not become detached for even months or years, but more commonly all of them would rot loose in from ten days to three weeks. When the silk ligatures on the large blood-vessels came away, if the healing process had formed in the blood-vessels a firm clot, which had become adherent, and, so to speak, "corked" it up, all went well. But, as very frequently happened, when the ligature and the rotten end of the artery were pulled off and there was no clot to act as a stopper, "secondary[2] hemorrhage" followed. This often came on after the patient's wound had been dressed and the surgeon had left, and, if so, very likely the first notice that the nurse had that anything was wrong would either be the gasping for breath of the patient or his moans and cries, or sometimes by the blood which had not only saturated the mattress, but had even appeared in a pool on the floor.

* This paper is one of the series prepared for and reprinted by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. This fact accounts for its popular style and the frequent use of non-technical terms. Twelve of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, rabies, surgery, internal secretions, protozoan tropical diseases, etc.

1. In this article I use the word antiseptic as the more popular one to include also the aseptic method.

2. So called to distinguish it from "primary hemorrhage," i. e. the bleeding occurring at time of the accident or operation.

How fatal were such hemorrhages may be seen from the fact that in 2,235 cases of hemorrhage in the Civil War 61.7 per cent. of the patients died.[3]

I shall never forget one night about ten days after the battle of Gettysburg, when it was my business as "officer of the day" to attend to all emergency cases. That night I was called to five cases of secondary hemorrhage. To indicate what a difference there is between modern and ancient conditions, in the thirty-four years since October, 1876, when I began the practice of the antiseptic method, I have not seen as many cases of secondary hemorrhage as I treated in that one night.

It was a rare thing for any patient after such an operation to get well under three or four weeks, and it was not uncommon for healing to be delayed for three or four months, so that, in spite of the great mortality, the wards of the hospitals were cumbered with convalescent patients. The rare case in which healing took place by "first intention," i. e., at once, was recounted as a triumph. To-day it is precisely the reverse. The case in which healing does *not* occur primarily and at once is regarded as a disaster.

But a prolonged convalescence was the least of the evils to which a patient was subject. A large majority of the wounds were followed by erysipelas, by lockjaw, or by blood poisoning, and hospital gangrene sometimes became a veritable plague. Gangrene in various forms during the Civil War was rife and often fatal. In 2,503 cases 1,142 patients died, a mortality of 45.6 per cent.[4] In one variety which was frequent, hospital gangrene, a simple flesh wound scarcely larger than the bullet which made it, became larger and larger till a hand would scarcely cover it and it would eat into the tissues until one could put half his fist into the sloughing cavity.

Of 505 cases of lockjaw (tetanus), 451 were fatal, a mortality of 89.3 per cent.[5] Pyemia or blood poisoning was terribly frequent and almost as fatal as it was frequent, for of 2,818 cases in the Civil War 2,747 patients died, or 97.4 per cent![6] When a joint was opened or wounded, the result was frequently either amputation or death, or not uncommonly amputation and death. Of 2,382 wounds of the knee-joint alone for which amputation was performed 1,212 patients died, a mortality of 51 per cent., and of 973 similar wounds for which amputation was not performed 591, or 61 per cent. of the patients died.[7]

Fractures, as most people know, are divided into two kinds: simple fractures in which the skin is unbroken, and compound fractures in which the broken bone protrudes through the skin. Simple fractures nearly always heal with relatively little pain and slight fever; but in the preantiseptic days when the skin was broken and the bone protruded, two out of three patients with these compound fractures were sure to die.

Moreover, certain regions of the body were forbidden ground unless the surgeon were absolutely compelled to invade them. No one would open the head if he could possibly avoid it. No one would dare to make an incision through the abdominal wall into the cavity of the abdomen unless a bullet or a dirk had gone before him and opened the way. The reason for our hesitation was that death stalked behind us.

How eloquent is the statement of Sir Samuel Wilks,[8] that "the change came home to me in an almost startling manner from what I witnessed in the post-mortem room. Some time before [i. e., before Lister's discoveries], when reading a paper on pyemia (blood poisoning), I had no difficulty in collecting 100 cases which had occurred within a very short time previously, when suddenly this terrible malady disappeared—it was gone never to return." So, too, lockjaw (tetanus), except in accidental cuts that have been neglected and have not received proper surgical care, has almost completely disappeared. Again, at the present day one practically never sees erysipelas after operations; and in order to find illustrations of hospital gangrene to show to my classes for the last thirty years I have had to rely on pictures from the Surgical History of the Civil War and other similar sources, for I have not seen a single case in private or hospital practice since I first adopted the antiseptic method in 1876.

II. THE DISCOVERY AND DEVELOPMENT OF THE ANTISEPTIC METHOD[9]

Neither time nor space will allow me to describe the many earlier steps. Schwann, in 1837, in studying putrefaction, reached the conclusion that it was not the gases of the air, especially the oxygen, as was then universally believed, that caused putrefaction, but organic particles which floated in the air and which could be destroyed by heat. In 1854 Schröder and Dusch showed that putrefaction did not occur in organic fluids in flasks if the air entering the flasks was simply filtered through cotton wool. Pasteur, in 1864, showed that it was necessary neither to heat the air nor thus to filter it, for if the air merely entered through a tortuous tube in which the dust could settle before it reached the fluid no change took place in the fluid, or if flasks containing a material which would putrefy were left open in a place where the air had been undisturbed sufficiently long to allow the dust to settle, as, for example, in a cellar, no decomposition took place and no growth appeared in such fluids.

Lister naturally was profoundly impressed by these studies of Pasteur and he proceeded to make many experiments to confirm or disprove them. Among them I will only relate the following:[10] Lister filled four glass flasks one-third full of urine and drew out the neck of each flask with a spirit lamp into a tube less than one-twelfth of an inch in diameter. Three of these long open tubes were then bent at various angles downward, while the fourth, equally narrow, was left short and vertical. Each flask was then boiled for five minutes, after which they were left with the ends of the small necks still open. Through these open mouths the air, including its oxygen, would pass out during the heat of the day and pass in during the colder night. The boiling was to kill any organisms in the liquid or on the sides of the glass. The object of the bending of the three necks downward was to allow the air to pass in and out, but to intercept the particles of dust, which, according to the germ theory, caused putrefaction. The germs, being heavier than air, could not rise in the bent necks. The fourth neck, however, being short and vertical, not only allowed the air to pass in and out, but gave a very narrow but real opportunity for dust and germs to fall into the liquid. If any of

3. Med. and Surg. Hist. War of the Rebellion, Part 3, Surg. Vol., p. 765.
4. Ibid., p. 824.
5. Ibid., p. 819.
6. Ibid., p. 858.
7. Ibid., p. 367.
8. Royal Com. on Vivisection, 1907-08, Q. 7,750.

9. See Lord Lister's Collected Papers, Oxford, 1909 (later reference to these Collected Papers will be indicated simply by "Lister, vol. —, p. —)," Brit. Med. Jour., Dec. 13, 1902. The Lister number celebrating the fiftieth anniversary of his receiving his degree, and Lister's Huxley Lecture in the same journal, Oct. 6, 1900, and Cameron's "Lister and the Evolution of Wound Treatment, etc.," Glasgow, 1907.
10. Lister: ii, 173; Brit. Med. Jour., 1871, ii, 225.

these were living organisms they could produce putrefaction. In a short time the vessel with the short and vertical neck showed growths of mold and the liquid changed its color, showing chemical changes; but in the three flasks with bent necks the urine *after four years was entirely unaltered.* A year after the commencement of the experiment a little of the urine in one of the flasks with a bent neck was poured into a wine-glass; it had not lost its original acidity and normal odor and a microscope showed not the minutest organism. In two days it was most offensive, and under the microscope already teemed with organisms. The other three flasks were subjected to a further severe and rather amusing test. Two years after the beginning of the experiment Lister had to transport them from Glasgow to Edinburgh on the railway when he was appointed to the chair of surgery in Edinburgh. He took charge of these flasks himself, "nursing them carefully," as he says, "to the amusement of my fellow travelers." In the drive from the station to his house the violent rocking of the carriage churned up the contents of the flasks till the upper part was full of a frothy mixture of this proved putrescible liquid with the atmospheric gases; yet after two years more no decomposition had taken place.

The explanation of this convincing experiment was simply this: The germs in the atmosphere could not rise against gravity in any of these tubes bent downward and so could not gain access to the urine. This easily preserved a decomposable fluid for four years, although the air passed in and out freely every day. But the urine in the flask with the straight but very narrow neck in a few days had undergone decomposition. The only difference between the flasks was that the three bent tubes prevented the entrance of the germs, though not of oxygen or other constituent of the air, while the straight but equally narrow tube allowed the germs to enter through in very small quantities, and yet these few grew and produced putrefaction.

In order still further to confirm this experiment, however, Lister tested these bent tubes by the condensed beam of light which Tyndall had used and found that they were optically empty.[11]

These experiments convinced him that it was not the oxygen or any other gas in the air that caused inflammation and suppuration, but that these were caused by *the minute organisms suspended in the air.* In dressing a wound, then, the problem was how to exclude not the air or its oxygen, which was impossible, but how to exclude the organisms in the air. This could be done by applying a dressing saturated with some material capable of destroying the life of these germs. This was the basis of the antiseptic method.[12] It must be remembered that at that time we were wholly ignorant of what now everybody knows, that there are hundreds of different kinds of germs or bacteria. Even the greatest scientists were then groping in the dark seeking for the light by observation and especially by experiment.

About that time Lister was much struck with an account of the effect of mingling phenol (carbolic acid) with the sewage of the town of Carlisle, England.[13] He proceeded, therefore, to experiment with it in compound fractures. I have already stated how fatal a compound fracture was in those days. Indeed, Mr. Syme, the great Edinburgh surgeon, predecessor and father-in-law of Lister, was inclined to think that, on the whole, "it would be better if in every case of compound fracture of the leg amputation were done without any attempt to save the limb." The marked success which followed his dressing these compound fractures[13, 14] with carbolic acid led him then to experiment with its use in abscesses.[13, 14, 15] This was followed again by such remarkable success that he was led to try it in accidental wounds and finally to intentional and extensive wounds, i. e., surgical operations.[16]

Practically the progressive introduction of the antiseptic system from compound fractures up to deliberate surgical operations was one vast experiment in the human living body—an experiment justified, as all the world well knows, by its splendid and continuing results. Yet when in 1880 or 1881 Lister wished to make additional experiments on animals to perfect his method still further, so stringent was the law in England that he was obliged to go to the Veterinary School at Toulouse, France.[17]

Like many surgeons, Lister had noticed the fact that a needle or a bit of glass would often lie for an indefinite period in the body without producing inflammation or pus, but that a bit of silk or linen thread was sure to produce pus. He believed the reason was that the thread was porous and that its interstices contained these germs which no one had then seen and identified, and that they gave rise to decomposition and produced the pus. So, Lister, from his previous experiments with phenol (carbolic acid), believed that if the thread with which an artery was tied were steeped in phenol and both the ends of the silk were cut short it might be left in the wound without producing any inflammation or suppuration. The wound could then be closed at once—an immense gain, for it would heal at once. "Before applying these principles on the human subject," he says, "I though it right to test them on one of the lower animals."[18] Accordingly, Dec. 12, 1867, he tied the great blood-vessel in the neck of a horse, having steeped the silk for some time in a solution of phenol. Both ends were cut short, the wound was entirely sewed up and treated with phenol dressings. Ten days after the operation the dressings were removed, the wound was healed, and there was no pus! Thirty-nine days after the operation he carefully examined the artery which he had tied. The operation was a complete success, the blood current had been entirely arrested and the thread had been covered in by dense fibrous tissue. Thus encouraged, he says: "I felt justified in carrying a similar practice into human surgery."[19] Jan. 29, 1868,[20] he saw a woman, 51 years old, with an aneurism as large as a large orange in the upper part of the left thigh. (An aneurism, I should explain, is a dilated portion of an artery, the yielding of the wall being due to disease of the wall of the blood-vessel. This dilatation continues to increase in size till finally the wall of the artery is so thin that it bursts and the patient dies from hemorrhage.) On the following day he tied the woman's artery with a piece of silk which had been steeped for two hours in phenol.

The wound was treated like that in the horse's neck, i. e., both ends of the ligature were cut short, the wound again entirely closed and a phenol dressing applied. The

11. See Tyndall's charming lecture on Dust and Disease, in Fragments of Science, 1871, p. 275. Appleton & Co.
12. Lister: ii, 37; Brit. Med. Jour., 1867, ii, 246.
13. Lister: ii, 3; Lancet, 1867, i, 326, 357, 387, 507; ii, 95.
14. Lister, ii, 3, 32, 37; Brit. Med. Jour., 1867, ii, 246.
15. Lister, ii, 32, 36, 42; Brit. Med. Jour., 1867, ii, 246.
16. Lister, ii, 188, 199, 256, etc.; Brit. Med. Jour., 1871, ii, 225; Edinburgh Med. Jour., 1871-2, xvii, 144; Edinburgh Med. Jour., 1875-6, xxi, 193, 481.
17. Lister, ii, 281; Lancet, 1881, ii, 863, 901; Tr. Internat. Med. Cong., London, 1881, ii, 369.
18. Lister, ii, 63; Lancet, 1867, ii, 668.
19. Lister, ii, 65; Lancet, 1867, ii, 668.
20. Lister ii, 88; Lancet, 1869, i, 451.

patient was immediately relieved of the pain she had previously experienced; she had no fever, the pulse was practically normal the entire time, and "her appetite, which had been absent during the four weeks of agony that preceded the operation, returned two days after it."[21] She made a perfect recovery. November 30, ten months after the operation, she suddenly expired. Fortunately, Lister himself had the opportunity of making the post-mortem. He found that her death was due to the bursting of a similar aneurism inside of the chest. Examining the artery which he had tied, he found that the silk had almost all disappeared, but that there was a little fluid around the remnant of the ligature, which probably would have developed into a small abscess and might have caused great mischief had she lived longer. This, therefore, suggested to him the expediency of substituting for the silk some other substance which would be more readily absorbed.[21]

In Philadelphia years before Dr. Physick had already tried animal ligatures made of buckskin, Dorsey those of kid, Hartshorn had used parchment, and Bellenger and Eve the tendon of the deer, but for various reasons these had all been abandoned. Lister determined to try catgut. Although he had great confidence in the use of catgut steeped in a solution of phenol, yet he says[22] "in order to put the antiseptic animal ligature to the test, I made the following experiment," for only by experiment in an actual living body of animal or man could the question whether it was actually safe or not be surely answered. Dec. 31, 1868, he tied the right carotid artery in the neck of a healthy calf at several places with different kinds of animal ligature, including catgut. All were cut short except one end of the catgut, which was purposely left three-quarters of an inch long to determine what would become of this foreign material. The wound was completely closed and dressed. After ten days the dressings were removed and the wound found quite dry. Thirty days after the operation Lister says, on dissection, he was struck with the entire absence of any infection or inflammatory thickening in the vicinity of the blood-vessel. On exposing the artery itself he was greatly disappointed at first to find the ligature to all appearance still there and as large as ever. On more careful examination, however, he found that this apparent ligature was not the catgut ligature at all, but that this ligature had been transformed into bands of living tissue, making the artery not weaker, as silk often did, but stronger than ever at the point where it was tied. The knots had disappeared and also the three-quarters inch of catgut purposely left. Everything had been absorbed.

Even one not a surgeon can see what an enormous difference in rapidity of healing without inflammation, pain or other serious disturbance of the body this use of catgut with immediate total closure and healing of the wound provided. Before Lister, the old ligatures hanging out in bundles were always inviting infection, suppuration, erysipelas, lockjaw, blood-poisoning, hospital gangrene and death. No patient was absolutely safe till the wound was absolutely healed and this often required weeks or months. With the catgut ligature, both ends being cut short, the wound closed at once, and, the ligature being absorbed, the wound healed in less than a week, not uncommonly in three or four days, with little, if any, immediate suffering and without any ultimate danger of those many serious complications above mentioned. But no one not a surgeon can appreciate to the full the meaning of these brief words. While the patient made a smooth and speedy recovery without complications, the surgeon slept the uninterrupted sleep of the just, secure against wearing anxiety on account of sudden hemorrhage or insidious infection. The heart-breaking tragedies which often made the surgeon wish he were a hod-carrier or even in his grave are now but specters of a horrid past.

As I have said, we had no idea at first of the enormous variety and different characters of the germs. In his early studies on putrefaction, Lister spoke of them in a general way as "germs," because the various species of plants (for they are plants and not animalculæ) had not been distinguished. Now there are scores and even hundreds of known varieties. Many of these simply cause putrefaction or decomposition and are not in themselves capable of giving origin to any particular disease. Other varieties, each one of which causes a special disease and can cause no other disease, have been isolated and identified. Some of these germs cause medical diseases, with which I have nothing to do here. The germs of lockjaw, tuberculosis, anthrax (wool sorters' disease), erysipelas, glanders, etc., are among the most virulent foes with which the surgeon has to contend.

How have these been identified and how do we prevent their entrance into the system of the patient? The process is very simple to describe, but very complicated and difficult practically. Let us take the case of lockjaw for instance. A peculiar kind of germ, looking a good deal like a tack with a straight body and a large head at one end, was discovered by animal experiments by Nicolaier in earth and dust in 1884.[23] In 1889 Kitasato, the Japanese bacteriologist,[24] first obtained it in pure culture, former experimenters having failed because they did not know that it only grows well when oxygen is excluded.

But how do we *know* that this tack-like germ and it alone is the cause of lockjaw?

First, in a patient ill with lockjaw, this particular bacillus or germ must be discovered.

Second, a pure culture of it must be produced; that is to say, the tetanus bacillus must be separated from all other germs and cultivated by itself. Third, some of this pure culture of tetanus unmixed with any other germs whatever must be injected into an animal to see point-blank whether this particular bacillus will produce lockjaw. Fourth, from the body of this animal the same germ that was injected must be recovered. Fifth, with a pure culture of this recovered bacillus the cycle must be begun over again and completed sufficiently frequently to assure the experimenter that the connection between the disease and the germ is not accidental, but essential and invariable. Sixth, no other germ used in the same way must produce lockjaw.

In this same manner the germs that produce inflammation and suppuration, which are *the* ever-present danger to the surgeon, have been identified, and also, what is equally important, the places where they and many others exist. In this way we have determined the fact that, while there are some in the air, they are few in number and so constitute a small though a real danger. But the places where they are found and are most dangerous are on the skin and clothing of the patient, the hands of the surgeon and especially under his finger nails and at the roots of his nails, on instruments, dressings, silk, catgut, and other things used for ligatures; in fact, practically every material that one can think of.

21. Lister, ii, 89; Lancet, 1869, i, 451.
22. Lister, ii, 93; Lancet, 1869, i, 451.
23. Deutsch. med. Wchnschr., 1884, No. 52, p. 842.
24. Deutsch. med. Wchnschr., 1889, No. 31.

We know now how all-pervading they are. We know, too, that phenol (carbolic acid), corrosive sublimate and other chemicals, or that boiling for a certain time, or heating to a certain degree and for a certain time, will kill these germs. Thousands of such painstaking researches in test-tubes and by many other bacteriologic methods have been carried out all over the world by men either wholly unpaid, working for the love of truth and love of their fellow creatures, or paid but meager pittances. Then when a discovery seems to have been made comes the needful, the finally convincing, the unavoidable experiment—in a living body itself. The only question is should Lister have made this final test first on a horse and a calf, or on two human beings? Can any one with a sane, well-balanced mind hesitate as to the answer?

III. THE RESULTS

The results of the establishment of the antiseptic method have been so extraordinary as to be incredible were it not for ample testimony the world over. They have been already stated in part, but a few words more must be added.

At present before an operation is begun the patient's skin, the surgeons' and the nurses' hands are scrupulously disinfected, sterile gloves are usually worn and every person is clothed in a disinfected gown. The instruments, dressings, ligatures, everything that is to come in contact with the wound, is carefully disinfected. Disinfected gauze "sponges" are used once and then discarded.

It is almost impossible for any one not a surgeon to understand how different are the results from this radical change of methods. No change of climate from fierce mid-winter storms to lovely summer breezes or autumn golden harvest could be greater. Most wounds now heal within a few days, one might almost say without the patient's being sick. Compound fractures and opened joints heal as if there had been no break in the skin. Arteries can be tied anywhere without fear of secondary hemorrhage. The abdomen is now fearlessly opened.

A woman with an ovarian tumor no longer has an operation postponed until it is very dangerous but inevitable, but by early operation is relieved almost without danger, even from tumors so large as to weigh twice as much as the patient herself. When I was assistant to Dr. Washington Atlee in the late sixties, before the antiseptic period, two out of three of his ovariotomy patients died, yet he was the then most famous operator in America. Now any surgeon who loses more than five out of 100 is looked at askance by his colleagues, and many, many hundreds of cases have been operated on with a mortality falling even below 1 per cent. There is not an organ in the abdomen that has not been attacked; organs which formerly when diseased could not be touched because death was almost sure to follow are now operated on every day. In fact as I once described it, the abdominal cavity is almost the surgeon's play-ground! The stomach, the intestines, the liver, the gall bladder, the pancreas, the spleen, the kidney, every organ is operated on, and with extraordinary success. Did space permit, a more detailed statement could be given, but it could scarcely be more convincing.

In obstetrics the same happy results have followed the introduction of the antiseptic method. Puerperal or child-bed fever, which not uncommonly used to kill one-half or two-thirds or even three-fourths of the women in the maternity wards of a hospital, now is practically unknown except in the neglected cases brought into the hospital at a late date, and the preantiseptic general mortality in maternity cases has been reduced from 10 per cent. or more to 1 per cent. and less. Brain tumors, abscesses and other diseases of the brain formerly inevitably caused death, for we never dared to touch them. Now the number of recoveries is very large. Compound fractures now have a mortality of 2 or 1 per cent. or less, instead of over 60 per cent. and now very rarely require amputation; and amputations formerly followed by death in one-half the cases have a mortality of 10 per cent. or less. In general, both the soldier and the sailor are provided with the first aid packet, which contains an antiseptic dressing. This has enormously diminished the mortality of wounds received in battle.

Perhaps no better evidence of the value of the antiseptic method in civil life can be adduced than the results in three hospitals. In Munich[25] the General Hospital was excessively unhealthy. Blood poisoning was very frequent and hospital gangrene, which had appeared in 1872, had become annually a more and more frightful scourge until 1874, when *80 per cent.* of all wounds that occurred in the hospital, whether accidental or inflicted by the surgeon, were attacked by it! At the beginning of 1875 Nussbaum introduced the antiseptic treatment. From then on till Lister's visit, presumably in the summer of 1875, *not one single case* of hospital gangrene had occurred and only one case of blood poisoning, and that a doubtful one. Erysipelas was rare and mild instead of being very prevalent and severe, and the convalescent wards, which formerly had been filled to overflowing, stood practically empty. In Halle,[26] Volkmann was operating in an extremely unhealthy hospital in small, overcrowded wards, with the toilet rooms opening directly into them and a large drain running directly underneath. It was so bad that it had been condemned to demolition. After his introduction of the antiseptic method in 1872, no single patient suffering from compound fracture in which conservative treatment was attained had died either from the fracture or from a necessary amputation, nor was there a single death from secondary hemorrhage or gangrene. No case of blood poisoning had occurred for a year and a half, though 60 amputations had been done. Hospital gangrene had entirely disappeared and erysipelas was extremely rare and mild.

Perhaps, however, the most extraordinary success was obtained by Lister[27] in his own wards in Glasgow. Lister was professor of surgery in Glasgow from March, 1865, till the autumn of 1869, but in that brief period he introduced measures that were absolutely revolutionary. The Royal Hospital in Glasgow was overcrowded, and in some parts of the building the conditions were so frightful that the wards had to be entirely shut up for a time. Lister's own account of this is interesting. He says:

> "A crisis of this kind occurred rather more than two years ago in the other male accident ward on the ground floor, separated from mine merely by a passage twelve feet broad, where the mortality became so excessive as to lead, not only to closing the ward, but to an investigation into the cause of the evil, which was presumed to be some foul drain. An excavation made with this view disclosed a state of things which seemed to explain sufficiently the unhealthiness that had so long remained a mystery. A few inches below the surface of the ground, on a level with the floors of the two lowest male accident wards, with only the basement area, four feet wide, intervening, was found the uppermost tier of a multitude of coffins,

25. Lister, ii, 248; Brit. Med., Jour., 1875, ii, 769.
26. Lister, ii, 250; Brit. Med. Jour., 1875, ii, 769.
27. Lister, ii, 124; Lancet, 1870, i, 4, 40.

which had been placed there at the time of the cholera epidemic of 1849, the corpses having undergone so little change in the interval that the clothes they had on at the time of their hurried burial were plainly distinguishable. The wonder now was, not that these wards on the ground floor had been unhealthy, but that they had not been absolutely pestilential. Yet at the very time when this shocking disclosure was being made, I was able to state, in an address which I delivered to the meeting of the British Medical Association in Dublin[28], that during the previous nine months, in which the antiseptic system had been fairly in operation in my wards, not a single case of pyemia [blood poisoning], erysipelas, or hospital gangrene had occurred in them; and this, be it remembered, not only in the presence of conditions likely to be pernicious, but at a time when the unhealthiness of other parts of the same building was attracting the serious and anxious attention of the managers. Supposing it justifiable to institute an experiment on such a subject, it would be hardly possible to devise one more conclusive.

Having discovered this monstrous evil, the managers at once did all in their power to correct it. . . . But besides having along one of its sides the place of sepulture above alluded to, one end of the building is coterminous with the old cathedral churchyard, . . . in which the system of "pit burial" of paupers has hitherto prevailed. I saw one of the pits some time since. . . . The pit, which was standing open for the reception of the next corpse, emitted a horrid stench on the removal of some loose boards from its mouth. Its walls were formed on three sides of coffins piled one upon another in four tiers, with the lateral interstices between them filled with human bones, the coffins reaching up to within a few inches of the surface of the ground. This was in a place immediately adjoining the patients' airing ground, and a few yards only from the windows of the surgical wards! And the pit which I inspected seems to have been only one of many similar receptacles, for the *Lancet* of September 25 contains a statement, copied from one of the Glasgow newspapers, that "the Dean of Guild is said to have computed that five thousand bodies were lying in pits, holding eighty each, in a state of decomposition, around the infirmary."

When to all this is added the fact that the large fever hospital was separated from the surgical hospital by only eight feet, that Lister's hospital of nearly 600 beds was cramped in area and almost always full to overflowing, and that he was operating, it might almost be said, in a charnal house, yet that those wards were continuously and conspicuously healthy and enjoyed for "three years immunity from the ordinary evils of surgical hospitals under circumstances which but for the antiseptic system were specially calculated to produce them,"[29] we stand convinced by such a huge unintentional experiment on man himself.

Were not results such as these sufficient to justify the experiments on animals as related by Lister himself and here quoted, by which such blessed relief has been brought to mankind?

What was seen in Glasgow has occurred all over the world. The surgical revolution of the last thirty years is the most momentous in the entire history of surgery. In every science—chemistry, engineering, botany, physics, electricity—the era of precise experiments has been the era when enormous and constant progress has been made. Medicine is no exception. We have closely studied disease by various observational methods, and clinical observation for two thousand years had slowly advanced our knowledge up to a certain point. Then experimental research, which employed methods of precision, varying conditions at will, noting the different results, and multiplying the experiments at will instead of waiting, it might even be years, until Nature's second experiment occurred, began its work; and in the past thirty years experimental research has produced a more fruitful harvest of good to animals and to mankind than the clinical observation during thirty preceding centuries.

But we are far from having attained perfection. In medicine and in surgery many problems of disease and death are still awaiting solution and can only be solved by the experimental method. A number of organs in the body are as yet inaccessible and others have functions of which we know little or nothing. Many operations ought to be bettered in method and in results. The causes of many diseases, such as cancer, scarlet fever, measles, whooping-cough, etc., are as yet unknown. To dispel all this ignorance and discover a cure for all these and other diseases is the earnest wish of wise and humane experimenters the world over. Shall the community aid these humane life-saving efforts, or shall they by restrictive legislation call a halt and let death slay our fellow creatures and especially our dear children? The answer is clear. It will never be other than an emphatic NO to the latter cruel course.

1729 Chestnut Street.

28. Lister, II, 45.
29. Lister, II, 126; Lancet, 1870, I, 4, 40.

THE OBLIGATIONS OF THE UNIVERSITY TO MEDICAL EDUCATION *

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NEW YORK CITY

In an admirable paper before the Sixty-fifth Convocation of the University of Chicago, in December, 1907, Dr. William Henry Welch,[1] professor of pathology in Johns Hopkins University, pointed out with clearness that the historical and right home of the medical school is the university, and that it should be an integral part of it, coordinate with other departments. In the discussion of this matter he called attention to the fact that no other type of medical school has existed on the continent of Europe other than that which was under the fostering care and which shared the ideals of the university. It was under similar ideals that the medical school in this country began, and Dr. Welch traced with admirable clearness the story of the transfer of medical education from the university to the proprietary medical school.

He called attention to the fact that the proprietary school in higher education is a unique institution in the history of education, one for which the United States of America is alone responsible. Dr. Welch traced then in the most interesting way the gradual recovery of medical education in this country during the last fifty years and showed that our medical education is to-day on the up-grade and that we are striving to remove it from the proprietary status and to bring it back once more into a close association with the university, where it may receive both the inspiration and the assistance which it must receive if it is to exist on a true basis.

Since the delivery of Dr. Welch's address two years ago, the Carnegie Foundation for the Advancement of Teaching, in conjunction with various medical bodies which are interested in this matter, has made a careful study of the present status of medical education in the United States and Canada. In the course of that examination every medical school in these two countries has

* Read at the Joint Conference of the Council on Medical Education and Committee on Medical Legislation of the American Medical Association, Chicago, Feb. 28-March 2, 1910.

1. THE JOURNAL, Jan. 4, 1908, p. 1.

been visited and studied. This includes the schools of every sect of medical practitioners. The material which this study has afforded is now being put into form for publication, and it is hoped that within two or three months it may be given to the public. To-day I shall endeavor to give some general results of that study and to give them in the light of the summary which I have just made from Dr. Welch, that is to say, in full recognition of the fact that the home of the medical school is in the university and that the gains which are to be had by the incorporation of the medical school as a part of the university are mutual, the university on the one hand offering a strong faculty and the medical school on the other hand conferring prestige and honor and scientific enthusiasm on the university. Such union must always be reciprocal if it is to be a true union; and there is no reason for the existence of the medical school in the university unless the university itself both confers and receives intellectual and educational help.

A brief statement of the situation which one actually finds in the United States and Canada to-day shows that there are in existence about one hundred and fifty medical schools. We have, in a word, more schools for the training of physicians and surgeons in the United States than are to be found on the whole continent of Europe. Of these, eighty-two are connected with actual colleges or universities. In making this count I leave out of consideration as university medical schools those under the control of such institutions as the University of Buffalo, the University of Maryland, and the like, in which the university is really fictitious. During the last ten years these one hundred and fifty medical schools have graduated on the average about five thousand physicians annually. How great an overproduction of physicians this is may be appreciated from a consideration of the following facts: From the experience in the older countries it seems clear that in large towns one physician for every 2,000 persons would, under present hygienic conditions, be sufficient. In more thinly settled regions one physician for every 1,000 inhabitants would suffice. In general, we may say that one physician for every 1,500 persons would be a fair ratio, and this is approximately that of the older countries of Europe. The actual proportion in the United States at this moment is one physician for every 568 persons, which gives us twice as many physicians per thousand of population as England, four times as many as France, five times as many as Germany.

Consider it again from another point of view. The twelve southern states gained, in 1908, 358,837 persons. On the basis of one physician for every 1,500 inhabitants the section needed, in 1908, 238 more physicians. During the course of the same year there were 465 vacancies due to death. In view of the current overcrowding, these vacancies did not really need to be filled; but if we fill two vacancies with one new physician, 233 more graduates would have been needed; in all, 471 new men. As a matter of fact, 1,144 physicians were graduated in southern schools and 78 more southerners in Baltimore and Philadelphia. The total would certainly come to 1,300 additional physicians, three times what was needed on a most liberal estimate. In the rest of the country the total gain in population was 975,000, to meet which 650 physicians would have been required. There were also 1,605 vacancies by death, to meet which would have required 800 more on the hypothesis just made. About 1,500 physicians would then amply have sufficed to fill the vacancies. As a matter of fact, 3,500 were produced. It seems clear that by the operation of the great number of medical schools and the laxity of our laws we have for twenty years past graduated into the profession about three times as many men as are actually needed.

Before considering the duty of the university in the face of these conditions I wish to refer to one or two of the grounds on which this overproduction has been defended and which, from the material which has been gathered recently, are clearly shown to be untenable. In the inquiries which have been made concerning the reasons for the existence of various low-grade medical schools I have been met everywhere by the statement that it was the function of such a school to furnish doctors for rural regions. It was admitted that the training of these doctors was poor, but the constant assertion is made that the inhabitant of a small village or the resident on an isolated farm must accept this poor medical attendance or none at all. The investigations which we have made show conclusively that there is no truth whatsoever in this claim. It is perfectly clear from the statistics which have been brought together that a low basis of education does not force a distribution beyond a certain point. It may not be generally appreciated that the reverse of this is also true, namely, that a high basis of education does not prevent a wide distribution; that is to say, men graduated from good schools will go into all fields. The fact is that in the distribution of physicians many elements will count—the number available for distribution, home ties, individual tastes, professional opportunity, and financial consideration. The experience of foreign nations and our own shows that more expensively trained doctors will go into the country just as the poorly trained do, and it shows, on the other hand, that the ill-trained and poorly equipped men will in large measure congregate and get in each other's way. In proof of this statement it may be said that in Canada, whose laws for the admission to practice are far more advanced than ours, the well-trained graduates of McGill and of Toronto go in large numbers into the territories of the Northwest. In our own country the most expensive physicians whom we have yet graduated are Johns Hopkins men, and no one would propose to-day that the Johns Hopkins standards of admission and of facilities should be universally enforced. Nevertheless, these elaborately trained men have an astonishing disposition to scatter. They are to be found in thirty-two states and territories, and about a dozen have gone as missionaries to the Orient. One finds a Johns Hopkins man at Clayton, Ala., a town of 1,000; at Gorham, Colo., a town of 364; at Wells River, Vt., with 666; at Fairfax, Va., with 200; at Mazomanie, Wis., with 900. Western Reserve University is almost equally high in its entrance requirements, and one finds Western Reserve graduates in small towns of 700, 500 and 400 inhabitants. The argument that a cheap medical school must be maintained for the benefit of rural regions is absolutely without foundation.

A second argument which has been advanced wherever the low-grade medical school takes root is the time-worn argument on behalf of the poor boy. For example, in the city of Philadelphia, where medical facilities are offered on easy terms and under the most moderate conditions of entrance requirement, Temple University considered it necessary, for the sake of the poor boy, to maintain a night school of medicine. This argument, like the other, is based not on consideration for the poor boy, still less on consideration for the public, but on the desire to run a medical school. The truth is that the medical education which the poor boy thus gets costs him just as much as he would pay for something better. A

four-year medical education in the Chicago, Baltimore, or Philadelphia schools on the ordinary basis costs in tuition fees and board $1,370. The same student can go to Ann Arbor for six years and save a few dollars; or if he wants a larger city, to the University of Minnesota at Minneapolis, for a little more. Now the absurdity is here: The low-grade medical school will tell you that their graduates can afford to go to small towns because they have not had an expensive education; well, then, so can the graduates of Ann Arbor and Minneapolis, for their education, though of higher grade, has been just as cheap. In a community where a fairly strong medical school is conducted it is possible to start a new school only by lowering standards, and it is this process which brings in the argument of the poor boy. The truth is that the poor boy has no right to enter the profession unless he is ready to make the sacrifices necessary for the right preparation. It is also true that in any large American community the poor boy who will qualify himself rightly will find the way both to a fitting education and to an efficient medical training. The argument for the poor boy is in effect an argument for the poor medical school, and it has no reasonable foundation.

Taking the situation of medical education as it now stands, knowing, as we now know, how great an overproduction of physicians we have been making, the question to which I wish to bring attention is this: What is the duty of a university with respect to medical education under such circumstances? Granting, as one does freely, that the historic, natural home of the medical school is in a university, what is the duty of an institution toward the teaching of medicine in view of the present situation of medical education and of medical practice in America?

To answer this question fairly, one needs to consider with some detail what the concrete services are which a university can render to its medical school. In seeking to answer that question, one will keep in mind the fact that, while medicine has always been a learned profession, it is to-day true that there is a vast difference between the scientifically trained physician and the able practitioner of earlier days. Within twenty-five years the development of certain fundamental sciences has been so great that the practice of medicine has come to be almost the application of these sciences—or at least this much may be said: the practice must start and rest as it did not in the preceding days on these fundamental sciences—pathology, anatomy, physiology, physiologic chemistry, bacteriology, and the like. This means that to-day we seek to train in our medical schools, as always, the practitioner of medicine, but the practitioner of medicine to-day is a scientifically trained man as he never was before. It does not mean that the analysis of the chemical laboratory or of the biologic laboratory will ever replace the skill of the clinician. It will always be true, so far as we can see, that in the treatment of diseases clinical skill and experience will be the largest factor in the physician's equipment, but it does mean that clinical skill to-day is supplemented with aids which the generation before did not know, and that the practitioner who is trained in a school which is unable to give these fundamental facilities is practicing the profession of a generation ago.

In view of the fact that the clinician is still the guiding spirit in medical education, it will always remain true that a medical school must be made up of school, hospital, and dispensary, operated as a single working plant.

Taking into account the present status, therefore, of medical education and taking into account also the standards of training which modern practice demands, it seems to me that the concrete services which the university can render to its medical department may be grouped under three heads:

1. The definition and maintenance of entrance standards.

2. The inspiration of the medical school with an appreciation of productive ideals both in education and in science.

3. The financial support of the medical department exactly on the same basis as other departments are supported.

To put the matter in a single sentence, a university which understands the present situation in medicine, which appreciates the ideals of modern medicine and which appreciates as well its own duties and responsibilities, will make itself responsible for the standard of admission to its medical school, for the ideals which govern it, and for the financial support which is to maintain it.

What is a reasonable basis, what is a reasonable standard to exact as the basis of a medical education? It is generally conceded that a scientific training in physics, chemistry, and biology constitutes an almost indispensable preliminary qualification for the study of medicine. As our present educational system stands, it is practically impossible for the student to obtain this equipment short of two years of college study, which would mean his entrance into the medical school at approximately twenty years of age.

When one comes to consider the enforcement of such a standard, however, it is clear that one must take into account the status of educational facilities in the various sections of the country. No standard can be enforced for which the schools and colleges of the region cannot reasonably well fit students. Our present educational facilities in the eastern and middle states and in the western states are already so considerable, they are so rapidly increasing, and they respond so quickly to pressure of the right kind that there is no question that the requisite number of physicians could be obtained from these sections even with the enforcement of such a standard as that indicated. The only practical difficulty that stands in the way is that the enforcement of such a standard would involve the death of most of the medical schools now existing in these regions.

In the South matters are very different. Both the legislative conditions and the educational facilities in that region are such that the standard just proposed, which is clearly a fair one for the profession itself, could not possibly at this moment be suddenly applied. This, however, is no excuse whatsoever for the almost utter absence of standards which is characteristic of that section. Only three complete institutions in the twelve Southern states have anything that can be definitely called a standard of admission for their medical schools. These are Tulane, the University of Texas, and the University of Virginia. Inasmuch as standards in medical education are necessarily tied up with the general educational system, I venture to suggest that the feasible standard in the Southern states at this moment for entrance into the medical schools is the same as that for entrance to the academic department, that is to say, high school preparation. This is the level which the general school situation of the different states either reaches at this moment or will reach in the near future. From this point progress may be gradual, but it will be

inevitable. I venture to point out also that the enforcement of even this standard in the South will bring about the extinction of most existing superfluous schools.

One more thing I venture to add concerning the matter of standards of admission to the medical school, a statement clearly applicable, however, to the American university throughout all its courses, and that is that no increase of standards is helpful which does not mean actual enforcement. The conscientious and just enforcement of the four-year high-school standard throughout the whole country would alone go far toward clearing the situation; but in any case a university which undertakes to maintain a medical school ought clearly to face the duty of maintaining in its medical school standards fully abreast of the educational status of its region. If an institution is not willing to do this, then it ought not to meddle with medical education at all. The college or the university which maintains a decent standard of admission for its college and a far lower one for admission to its medical school is frankly disregarding its own duty to medical education and is seeking, as a rule, to support a medical school out of fees in order to have a certain institutional completeness. The day has gone by in the United States when an institution calling itself a university can do this without being recognized as shirking the responsibilities of a true university.

There are in the United States a few institutions of high grade which require college graduation for admission to their medical schools. We may rejoice to have this standard set up in a few of our best schools. I do not believe, however, that it will be generally adopted, and largely for the reason that, however necessary it is to give the medical practitioner the advantage of a liberal education, it is also important for him to get into the profession before he is too old.

With regard to the second specific service of the university to the medical school, namely, as to its influence on the pedagogic methods and the scientific ideals, I venture at this point merely to call attention to the very general neglect of this function of the university in most American institutions. The American medical school, even when it has been incorporated into the university itself, has remained in many cases an *imperium in imperio*. There has been, as a rule, little commerce between the professors of medicine and the professors of other faculties of the university. This has been due in part to the fact that the professor of the medical school has been in the past a practicing physician coming into the school for only brief lecture hours and having little touch with teaching or with the members of other faculties. In the best schools to-day, where not only the professors of physiology, pathology, chemistry, anatomy, and biology are men giving their whole time to the work, but where also the professors of medicine, of surgery, of pediatrics, are coming to be placed on an explicit teaching basis, the opportunity for the development of a true university spirit in the medical school is beginning to appear. This ought to result in the spread of the scientific spirit through the medical school; and while it will always remain true that the chief function of the medical school is to train the medical practitioner, it will also be true that the spread of university ideals will mean that more men will take up the investigation of medical problems from the scientific standpoint and that our medical schools, so organized, will lend themselves in increasing measure to the development of the scientific side of medicine and the investigation of its problems.

I venture here to allude to one feature of our American medical school organization which, from the standpoint of one long associated with an institution of learning has struck my attention forcibly, and that is the project for a divided medical school. It seems clear to me that such a school has distinct disadvantages and that the very division gives up in large measure the opportunity of the university to create in the medical school university ideals. It is difficult to understand, for example, how a medical school in which the clinical school is two hundred miles away from the scientific laboratories can receive any great inspiration from the men who work in these laboratories. Still more difficult must it be for the clinician, whose spirit ought to dominate the whole institution, to keep the laboratory methods and the laboratory men in touch with clinical aspirations and clinical needs. It may be that the divided medical school will succeed, but it seems that it must succeed against much greater obstacles than the school which is organically one. I cannot help wondering, for example, how it would affect the pedagogic and professional ideals of an engineering school if the first two years of it were given in one place and the last two years in a place two hundred miles away. My impression is that there would be two separate schools with very little more reaction, the one on the other, than exists between any other two schools so situated.

With respect to the third service which the university ought to render to its medical department, namely, that of an adequate financial support, I wish to speak with some degree of definiteness. This obligation is one which few colleges or universities in our country have frankly faced. In more than one report of university presidents during the past year I have read the boast that the medical school has not cost the university a cent! Colleges and universities have taken over medical schools in distant places with no expectation whatsoever of furnishing any support, and generally throughout the relations which have existed between colleges and universities on the one side and medical schools on the other there has been a most remarkable absence of any sense of financial obligation on the part of the university. I am convinced that this action has been due in the main to a lack of knowledge on the part of college and university trustees and officers. They have come to look on medical education as self-supporting; they desire a medical school in order that their institution may seem complete. The overproduction of physicians is a matter with which they are not acquainted, and the college and university have gone ahead to take over a medical school with absolutely no thought of its support—a thing which they would never do with a school of applied science. Just why it should be believed that a medical school could be sustained by moderate fees, while an engineering school or a college of arts needs a large and strong endowment, is a matter which I have found it difficult to understand. Furthermore, when an engineering school undertakes to sustain itself in the main from fees, it exacts a fee somewhere comparable with the cost of the education. Thus the Institute of Technology at Boston, which is sustained in the main from its fees, charges a tuition fee of $250 a year and laboratory fees in addition, which amount in some cases to $50 more. Such a fee for a medical department would be thought impossible.

What does it cost to run an adequate, all-round medical school? By an all-round medical school I mean one in which all departments are fairly strong. It will be found that some schools of fairly high reputation have maintained themselves by making a single department strong and leaving all the rest weak.

The investigations of the Carnegie Foundation prove that it costs easily $10,000 a year to conduct any one scientific department of the first two years of medical education in a satisfactory fashion for classes of fair size. This means the teaching of a comparatively small number of students and makes relatively slight provision for any scientific activity on the part of the teachers. A number of institutions that are economically conducted spend $15,000 or more a year on a single subject like pathology or physiology, including a fair provision for investigation, and these are not institutions which one would think of as most liberally endowed. A medical school, therefore, which is not in a position to spend $50,000 or $60,000 a year on the work of its first two years has omitted some part of its legitimate duty. It will be difficult for any complete medical school to do its fair duty by a moderate body of students with an income of less than $100,000 a year. Furthermore, this cost will increase rather than diminish, for the reason that with the improvement in the training of the first two years correspondingly improved clinical teaching will be required. It has been one of the anomalies of this whole development to note that many medical schools have acted on the idea that standards of admission could be raised without further provision for an improvement in the teaching facilities and in the teaching itself. It requires only a year's experience, however, for such a school to appreciate the fact that young men who have had two years of college training will not be satisfied with the kind of teaching nor with the facilities which will be accepted by boys fresh from the high school. The college trained man becomes restless under the physician who drops in to lecture and spends half the time in telling stories from his medical practice, and he is not at all willing to sit under a teacher whose knowledge of his subject is evidently gathered from the text-book before him. The raising of standards of admission means an important increase in expense on account of the quality of the instruction. An institution which undertakes the teaching of medicine on a basis much lower than that which I have indicated is not likely to serve either the cause of education or the cause of medical practice, and an institution which finds itself facing the question of the creation of a medical school or of the adoption of one should fairly face also the question whether it can get the means necessary for its support. It goes without saying that no university is justified in entering into any arrangement for a medical school which rests on a contractual relation. Unless the university can control, inspire, and support the medical school, it has no right to it.

Few institutions in the United States or Canada have lived up to their obligations to their medical departments in all three of the essential respects to which I have referred. Some have not even appreciated any one of them. As I have before remarked, eighty-two of the one hundred and fifty medical schools of the country are connected with actual colleges and universities. Of these, perhaps one-half fulfil all three of these obligations in a reasonable degree, in the sense that the universities fix and enforce definite standards for entrance, secure the same sort of teaching and scientific activity in the medical department as in others, and, finally, make themselves responsible for funds that go far beyond tuition fees received by the medical department. Of these institutions it may be fairly said that they are alive to and meet the responsibilities which they have undertaken in the matter of medical education.

There is in the next place a group of medical schools legally and organically parts of a college or university, but neglected by the institutions of which they are a part in one or more of the three services to which I have referred. It is difficult to say what these departments gain by their university connection. They receive no support, they get no oversight, they do not breathe the university air, nor receive any inspiration from university ideals. For example, the medical departments of Vanderbilt, Northwestern, Tufts, Bowdoin, administer in their own way the entrance requirements which the university sets up, and in none of these cases are the entrance requirements strictly enforced. In the matter of support, the university is often a harsh creditor to its medical department, sometimes not even lending it a dollar and at other times exacting, as in the case of Vanderbilt and Tufts, principal and interest for every advance made out of the general funds. As these institutions, organic university departments though they be, live on their fees or less than their total fee income, it is clear that the ideals of the university do not materially affect them. They are for the most part routine teaching schools, in no true sense university schools. Some of these organic medical departments belong to universities which can hardly hope by anything short of a miracle to do anything for medical education. For example, Drake University, with total productive funds of $290,000, has an organic medical department. The University of Alabama, with a total state appropriation for buildings and maintenance of $71,000 a year, has such a department. So have the University of Mississippi with similar appropriations of $110,000, the University of North Carolina with an annual appropriation of $70,000, the University of Tennessee with an annual maintenance appropriation of $65,000. It is perfectly clear that the problem of medical education is begun rather than solved when a university incorporates into its organization a medical school.

Twenty-seven of the remaining colleges and universities of the United States and Canada have nominal or affiliated medical departments which they not only do not support, but do not control. The state universities of Arkansas, Georgia, Illinois, and Oregon are in this position. Among endowed institutions that lend their names to proprietary medical schools for which they can hope to do nothing and which they do not control so long as they are in this situation are the University of Denver, Washburn College, Cotner University, Ohio Wesleyan University, Epworth University, Baylor University, and Dalhousie University. The budgets of some of these institutions are absurdly small in comparison with the cost of a decent medical school. Among them are some which are capable of leading respectable lives as colleges, but are little less than impossible as universities—for example, Union University, New York, which is the name given to the superficial combination of Union College with weak schools of law and medicine in Albany.

In a word, an inspection of the eighty-two medical colleges in the United States and Canada which are associated with colleges and universities shows that the relation is in many cases a superficial one. The college or the university has not in these instances approached the problem of medical education with serious purpose or with any fair sense of its responsibilities. It has been willing to give its name to a medical school, no matter how far away it was from university ideals and scientific traditions. In truth, the colleges are in no position to throw stones at proprietary medical schools.

If medical education in the United States is within the next decade to be raised to a fair standard, it is clear that the majority of the one hundred and fifty medical schools now existing ought to die. The country has no need whatsoever for even one-third of that number. Less than fifty decently equipped schools would more than supply all the needs of the country for a century to come.

The question whether we shall be able to bring public opinion to some fair understanding of this question and to secure such legislation as will provide a right scrutiny for candidates for the profession rests in considerable measure on two factors, which are moral rather than educational—educational patriotism on the part of the colleges and medical patriotism on the part of the physician.

By educational patriotism I mean this: A college has a duty greater than the mere ambition for a large student body or for institutional completeness, namely, the duty of loyalty to certain standards of common honesty, of intellectual sincerity, and of workmanlike skill, from which it cannot afford to depart. The combination of these qualities means a loyalty to the ideals of education itself, a patriotism larger than the interests of the college and taking hold on the very ideals of civilization. A university with such educational patriotism will not take on a medical school unless it can discharge its full duty by medical education; or if, in the days of ignorance which was once winked at, it became entangled in such an alliance, it will frankly and courageously go to work to get rid of a situation which is no longer tenable, for the day has come when all colleges everywhere are called on to repent. The flirtations between universities and medical schools ought now to cease and those institutions which have become involved in this sort of relation ought either to marry or get a divorce. The college which develops educational patriotism will be ready to do its duty toward the general system of education and toward the interests of professional education as well, and the question whether the inefficient medical school is to disappear or not will in large measure depend on the growth of a true university patriotism which looks on educational sincerity and thoroughness as something greater than institutional completeness.

By professional patriotism among medical men I mean that sort of regard for the honor of the profession and that sense of responsibility for its efficiency which will enable a member of that profession to rise superior to the consideration of personal advantage or of social cliques. As Bacon truly wrote: "Every man owes a duty to his profession," and there is no professional man whose obligation is more clear than that of the modern physician and surgeon. He is the outcome of the culminating forces of civilization, and he owes his very existence to the progress of these forces. For a hundred years past medical education has been a perquisite of the American medical profession, a thing which has been used both as a direct means of revenue and as a source for a wide circle of patients. When a particular group of physicians in a given city have been left out of existing medical schools they have promptly got together and made a medical school of their own. The day for the proprietary medical school has gone by. How long they can still survive will depend in large measure on the spread among American physicians and surgeons of a medical patriotism which will enable them to accept the new order of things and to come to the aid of the reputable universities in the support of medical schools where ideals of high professional honor and efficiency may be placed before the eyes of those who come to study in them.

I commend to the thoughtful consideration of medical men everywhere—those with and those without school connection—the wise, self-denying action of the physicians of Seattle, who, recently stirred by the rumor of a projected medical school on local lines, went on record as a body against any attempt to organize a medical school until the state university of Washington could undertake the task with credit to itself, to the medical profession, and to the people of the state.

THE SERUM AND PRECIPITATE REACTIONS FOR SYPHILIS AND THEIR CLINICAL VALUE

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Several years ago Wassermann, Neisser and Bruck[1] published an article giving a method for the diagnosis of syphilis by examination of the blood. The experiments on which this method had been based were made on monkeys. Shortly thereafter appeared a brief clinical report by Detre and an extensive one by Neisser, Bruck and Schucht, whose work had been chiefly directed toward demonstrating syphilitic antigen in extracts of blood corpuscles. These were soon followed by reports from Wassermann and Plaut, Schutze, Morgenroth and Stertz, Marie and Levaditi, Citron, Fleischmann and Butler, and others.

In the communication of Fleischmann and Butler, which was the first to appear in the English literature, the principles and technic of the serum reaction were set forth in detail, and the conclusions contained in this article in regard to diagnosis and therapy of syphilis based on the serum reaction have been confirmed by practically all subsequent communications on the subject.

For the principles and methods of performing the reaction the reader is referred to the above article and subsequent communications from Butler.[2]

The technic for the serum reaction as originally given has undergone no essential changes, except that alcoholic syphilitic organ extracts have in great part replaced salt solution extracts.

SERUM TESTS

A number of workers have attempted to modify the technic of the test. The most important of these modifications, considered in the order of their publication, are given below:

1. BAUER'S: Bauer takes advantage of the natural amboceptor in the human serum for sheep's corpuscles and dispenses with the antisheep amboceptor, which is prepared by immunizing a rabbit with sheep's corpuscles. This modification was soon found wanting as the content of human serum in antisheep amboceptor is variable.

2. TSCHERNOGUBOW'S: Tschernogubow was the first to suggest the use of an antihuman amboceptor, which is obtained by immunizing an animal with human blood corpuscles. He proposed to make two drops of blood of a suspected patient suffice for the necessary serum, blood corpuscles and complement for the reaction. To one of the two tubes employed for each blood test the necessary quantity of antigen was added. Controls on antigen and amboceptor were also used. The tubes at this stage were incubated for one-half hour, when the anti-

1. Deutsch. med. Wchnschr., 1906, xix, 745.
2. THE JOURNAL A. M. A., Sept. 4, 1908, and New York Med. Jour., Jan. 30, 1909.

human amboceptor, properly diluted, was added. He did not inactivate the serum to be tested.

3. HECHT'S: Hecht followed the Bauer system but proposed to dispense with the addition of guinea-pig serum for its complement by taking advantage of the complement present in human serum.

4. NOGUCHI'S: Noguchi also used Tschernogubow's anti-human amboceptor. He usually depends on a separate suspension of human blood corpuscles, although occasionally adding the corpuscles with the serum of the individual to be examined. He departs in one particular from the Tschernogubow system and clings to the Wassermann technic by adding guinea-pig serum for its complement instead of depending on the patient's own serum. He takes advantage of the fact that serum and organ extract retain their properties for a long time in the dried state and therefore dries his antigen and amboceptor on filter paper. He standardizes the filter papers and uses them in the reaction instead of the material in the liquid form. Noguchi's system is virtually the system of Tschernogubow. His simplification of the latter is to employ the antigen and amboceptor in the dried state.

Some of the modifications are said by their authors to be more sensitive than the Wassermann system. I know from experience that none of these modifications is absolutely reliable. It is to be hoped that the established reliability of the serum reaction for syphilis done according to the Wassermann technic will not be compromised by the haphazard performance of the reaction by one of these modifications in the hands of inexperienced workers.

PRECIPITATE TESTS

The precipitate tests that have been offered for the diagnosis of syphilis and which have emanated directly or indirectly from the serum reactions are as follows:

1. The distilled water or Klausner reaction. This consists in bringing together in a test tube 0.2 c.c. of the serum of a suspected patient and 0.6 c.c. of distilled water. If the serum is from a syphilitic, a precipitate forms and collects at the bottom of the tube in from 1 to 15 hours; if from a non-syphilitic, no precipitate forms. Klausner subsequently reported that he obtained the reaction with a number of typhoid, pneumonia and tuberculous patients, thus showing that it was absolutely non-specific.

2. The precipitate reaction of Fornet and Schereschewsky. They found that on adding to the test tube containing the serum of a parasyphilitic, the serum of a patient with secondary syphilis, a ring precipitate occurred at the point of contact of the two serums within two hours. This reaction is obtained with normal serum and is, therefore, non-specific.

3. Porges and Meier noted that on adding a suspension of lecithin in salt solution to a syphilitic serum contained in a test tube a heavy deposit collected at the surface of the fluid in from 15 to 20 hours at room temperature. They also noted the same result on using a solution of sodium glycocholate.

Elias Neubauer, Porges and Saloman later reported their results with sodium glycochocolate in syphilitic and non-syphilitic cases controlled by the Wassermann reaction, and claimed to have obtained a greater number of positive reactions in syphilitic cases with the glycocholate than with the serum reaction.

I have investigated with Mefford[3] the precipitate reactions with lecithin, sodium glycocholate and also sodium taurocholate, controlled by the Wassermann reaction in 75 cases of syphilis, parasyphilis, tuberculosis, carcinoma, etc. Ninety-three per cent. of the cases with active syphilis gave a positive result with the Wassermann reaction. In the same cases the sodium glycocholate reaction was positive in 79 per cent., the taurocholate in 61 per cent. and the lecithin in 91 per cent. In the examination of the control cases the Wassermann reaction was uniformly negative, the sodium glycocholate was positive in 1, and the sodium taurocholate in 2 typhoid cases, while the lecithin was positive in 17 control cases.

We concluded that the serum reaction surpassed in the percentage of positive results, and consequently in reliability, the precipitate reactions with lecithin, sodium glycocholate and taurocholate for syphilis and parasyphilis. The sodium glycocholate and taurocholate, especially the former, show a large percentage of positive results in manifest syphilis and a very small percentage in control cases. The lecithin test is positive in fully 50 per cent. of non-syphilitics suffering from other diseases, and is, therefore, of no value in the diagnosis of syphilis.

The precipitate reactions have not been fully investigated. From the limited inquiries that have been made it appears that none of them, except perhaps the reactions with sodium glycocholate and sodium taurocholate, could be considered of any clinical value. The only reaction for the diagnosis of syphilis that has decisive value is the complement-binding test of Wassermann, Neisser and Bruck, made according to their system of performing it. After performing a test according to one of the modifications of the technic advanced by the authors mentioned, it is absolutely necessary to control the result by the original Wassermann reaction, if reliable and dependable results are desired.

The proper performance and interpretation of the serum reaction for syphilis demands of the operator a considerable acquaintance with laboratory technic in immunity work and experience with the reaction itself, for otherwise the results are not dependable. Discrepancies in results obtained with the Wassermann technic and modifications of it not infrequently arise from over-enthusiasm and shortcomings in one's own work.

The clinical value of the serum diagnosis of syphilis has broadened far beyond the scope originally believed to be its limit. It is not only of decisive value when positive in the diagnosis of syphilis, and almost equally so when negative, but it forms an excellent control for treatment, and, as I originally suggested, a means of controlling, in a great measure, the future of the syphilitic patient.

CONSIDERATIONS REGARDING THE SERUM REACTION

The serum reaction has been chiefly considered in regard to:

1. The diagnosis of syphilis and parasyphilis.
2. Treatment of syphilis.
3. Contagiousness.
4. Marriage of syphilitics.
5. The protection of the syphilitic individual.
6. Congenital syphilis.

DIAGNOSIS

In the secondary stage fully 98 per cent. of the subjects give a positive reaction; in the tertiary stage from 90 to 95 per cent. are positive. In latent syphilis previous treatment and the number of years elapsing since the infection occurred play a rôle. From 60 to 70 per cent. of individuals who have not had their infection more than two or three years, in whom the disease is apparently latent and who are not being treated, will give the reaction. Those who have had the infection for a number of years will give a reaction in from 40 to 50 per cent. of cases. The better they have been treated in early years the less frequently they give the reaction in after years. In syphilis of the viscera and in parasyphilis the reaction is obtainable in from 75 to 80 per cent.

3. New York Med. Jour., Oct. 31, 1908.

of cases. A close analysis of the latter cases would undoubtedly raise the percentage of positive reactions, as too frequently the clinical diagnosis, which is often accepted when the serum reaction is negative, is incorrect.

The results obtained by various investigators during the primary stage vary. This in all probability is due to the different periods with regard to their infection in which they were examined. Some report finding the reaction in two-thirds of the cases in the chancre stage, others as high as 90 per cent., and my own results run as high as 100 per cent.

Bruck, Stern and Lesser report finding the reaction in a few cases before the appearance of the initial lesion. Lesser obtained the reaction for syphilis in a case of gonorrhea one week following exposure, whereas the chancre did not appear for two weeks, which, in turn, was followed in six weeks by secondaries. The results obtained in the primary stage are of great importance when we consider the possibility of prophylaxis against general infection by extirpating or destroying the initial lesion. It would appear from the observations of many that the reaction does not appear as soon as the initial sclerosis, but a few days or a few weeks later. On the other hand, the reaction has been found positive before the lesion has appeared.

TREATMENT

While I am disinclined to believe that the extirpation of the initial lesion, a teaching centuries old, will obviate the occurrence of a systemic infection, it would seem consistent with our present knowledge of the question that, if a local genital or extragenital lesion contained the *Spirochæta pallida* (which is regarded as the cause of syphilis), and the blood serum was negative to the syphilitic reaction and there was no evident adenopathy, the chancre should be removed. I would not expect this to obviate the general infection, because we know from clinical experience and from reports of cases so treated that it does not do so, but if the primary infection is a local one and the constitutional infection is not detectable at the time of blood examination, this would appear a tenable procedure.

In order that the serum reaction for syphilis may prove of value as an index to specific treatment, it is necessary to know whether or not its occurrence coincides with the activity of the virus, whether with the subsidence of the latter, viewed from a disappearance of symptoms, the reaction becomes weaker, and finally negative, and whether a positive reaction during apparent latent syphilis is, in the absence of visible or palpable specific lesions, to be regarded as a forerunner of them, or indicative of visceral luetic changes. The obtaining of a positive reaction in secondary and tertiary cases to the extent of from 90 to 100 per cent. is conclusive evidence of its association with virus activity.

In nearly all patients placed under vigorous antisyphilitic treatment a weakening and final disappearance of the reaction will follow. The reaction rarely disappears before the symptoms, and usually not for some time thereafter. Some tertiary cases that seem resistant to treatment continue to show the reaction and form an exception to the above rule. But this is, in all probability, due to the fact that many of these individuals are more or less immune to specific treatment and the process continues active. The frequency of the reaction in the early periods of latency in syphilis, where it is not treated, is, from a clinical standpoint, comparable to the frequency of recurrences in these cases. Its occurrence in later periods of latency is likewise comparable to the frequency of visceral lesions found in old syphilitic cases that come to post-mortem from other causes and are there recognized for the first time, and to the development of many visceral and parasyphilitic lesions recognized during life.

The following facts, first, that the reaction is found in practically all secondary cases and in 90 to 95 per cent. of tertiary cases; second, that the reaction weakens and finally disappears; as do the symptoms under specific treatment; third, that a negative reaction and absence of symptoms may sooner or later be followed by a reappearance of both, seem to me incontestable evidence that the reaction means, when found, active syphilis, and is therefore a positive indication for treatment.

If an individual who has been apparently free from symptoms and in good health for years gives a positive serum reaction, it signifies that he has somewhere in his organism an active syphilitic process. This may be in a location that does not cause symptoms and is not ascertainable by the physician. It may signify the development of a serious visceral or parasyphilitic affection, for we know that in practically 100 per cent. of cases of general paresis and in a very large proportion of tabes the serum reaction is positive.

As the treatment for syphilis is usually continued for from one to three years, the serum reaction could be of value only during this time in deciding whether or not the treatment is being pushed to the necessary extent, but in no case should it be interrupted unless the patient gives a negative reaction.

As it is a matter of experience that during the periods of latency the serum reaction is found positive in a considerable percentage of cases, which concurs with clinical experience that recurrences are not infrequent during this time, patients should be controlled at comparatively short periods with the serum test as well as by clinical observations. This should be done because, while the manifestations, if they appear externally, might be considered a sufficient guide for resumption of treatment, no one would care to await a recurrence in the form of a specific meningitis when we have a means of ascertaining activity of syphilis and of anticipating such a catastrophe.

On the other hand, when treatment is given a patient each year or oftener, such frequent examinations might not be necessary, but no period of treatment can be considered complete in the light of our present knowledge unless it is controlled by the serum reaction; so that not only is it an index to the beginning of treatment, but also to its interruption. It should be borne in mind that the skin and mucosa manifestations of syphilis are the least important in the life history of a syphilitic patient, and that patients are not safe because such evidences have not appeared for years. Such lesions seldom prove dangerous to life; at the same time we know that, next to tuberculosis, syphilis, directly and indirectly, is the most frequent cause of death in man (Gerhardt). Its fatal action is through the cerebrospinal and cardiovascular systems, glandular organs, etc.

Patients should never be assured that they can be or have been cured of syphilis, for once syphilitic always syphilitic. The continuous treatment of the first three or four years following infection should be followed by the chronic, intermittent treatment. No period of treatment should be interrupted unless the serum reaction is negative. No patient should be allowed to go longer than three months following the chronic, intermittent treatments in the earlier years, nor longer than six months in later years without a serum test being made. By this method many of the serious and fatal consequences of syphilis will be obviated.

CONTAGIOUSNESS AND MATRIMONY

No opportunity for observations on the question of contagiousness appears to have come to those who have reported on the serum reaction. It is evident that no opinion on this point, so far as it concerns the serum reaction, could be expressed. It is equally evident that any solution of the question of matrimony for a syphilitic based on this reaction could be arrived at only by a study of the question of contagiousness, which is impractical. Any regulation of matrimony on this test alone would seem to be unfounded. However, after the period of time which clinically has been regarded as necessary to elapse before a syphilitic is considered safe to marry, his blood should be negative to the serum test, and the same injunctions for controlling his case as outlined above would be advisable.

PROTECTING THE INDIVIDUAL

The serum reaction is found positive in practically all cases of general paresis, and in a large percentage of tabes cases. While the percentage of positive reactions in tabes cases varies more or less, as reported by various investigators, this is perfectly conceivable when we remember the chronicity of tabes and also the frequency with which tabetics have been subjected to specific treatment, as a result of which abeyance of the virus activity may occur, but at the same time the pathologic changes of tabes continue to progress. We also know from clinical experience that chronic infections may have periods of quiescence irrespective of treatment.

Many visceral lesions of syphilis are first recognized post-mortem, and, as a matter of fact, fully half the syphilitics that come to post-mortem from other causes show some evidence of syphilis that was not recognized during life. Fully 50 per cent. of latent cases of syphilis give positive reactions. There can be little doubt that this is more than a coincidence, and that there is a direct association of the latter with the former post-morten facts. This, as well as the previous mentioned relation of the reaction to syphilitic manifestations, its failure with their disappearance and the return of both, all indicate that a positive reaction indicates activity of the virus. Recognizing this, it seems perfectly logical that we should expect to obviate many of these latter developments of syphilis by controlling the patient's condition with the serum reaction and medicating accordingly.

REACTION IN HEREDITARY AND CONGENITAL SYPHILIS

In hereditary syphilis the test is found, I may say, constantly, the reaction is strong and appears slow to disappear under treatment, possibly because the latter is not continued long enough, as is too frequently the case in congenital syphilis. Many workers who have reported on this phase of the question claim a concurrence of the reaction with the Colle and Profeta laws, while others maintain a directly opposite view, contending that neither law is sustained in the light of this test.

I have examined the blood of women who have borne syphilitic children, and who themselves were clinically apparently free from the disease, and the reaction was negative with their serums. I have also examined a syphilitic woman who had borne a healthy child who had not given the reaction up to the sixth week. On the other hand, the blood of a six-months-old infant born of a tertiary syphilitic mother gave a positive reaction, although this infant had never, so far as the history and examination could be depended on, presented any evidence of syphilis.

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STATUS AND DUTY OF THE MEDICAL OFFICER *

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The history of the military surgeon is the history of surgery, for he has always contributed freely of the knowledge gathered in the great school of the battlefield to his less fortunate brothers in civil life, the evolution of his handicraft keeping pace with the growth of medico-military lore. In the early days he was much less favored in academic accomplishments than now; in fact, there was a marked difference between the social standing of the surgeon and that of the physician of that time, for, while the latter was scholarly and refined, and usually succeeded in maintaining his caste, the surgeon was of lowly origin and followed a despised calling. In the dark ages surgeons were little more than body servants to the generals and officers commanding—often serving in the double capacity of surgeons and barbers. Needless to say, the skill and the numbers of such men were insufficient for the task of treating the sick properly; indeed, the common soldier of the early period was given but scant consideration in any event, for it is said that Xenophon had but eight surgeons with his ten thousand troops.

Throughout the middle ages, military surgeons were still inconspicuous for any good purpose they served; they had no regular place in the ranks nor did their names appear on the pay rolls; they took such compensation as they received in gifts from grateful patrons. Out of the stormy centuries of the middle ages, when the profession of arms was occupying the first place in human endeavor, grew a greater appreciation of the need of organized effort to minister to the sick and wounded while bearing arms. Naturally the French and English were the most active in this attempt, and we find Ambroise Paré in the sixteenth century, and later Percy and Larrey, under Napoleon, exercising a marked influence on the practice of the day, for they were men of strong and resourceful personality.

The eighteenth century was well advanced, however, before any of the customs which obtain to-day were instituted, for, in Great Britain, it was not until 1751 that surgeons were uniformed in the dress of the troops with which they enlisted. The physical examination of recruits was begun in 1745. Coming down to the last century, the German sanitary corps was made a part of the German army as late as 1873. In 1860 the first British army medical school was opened at Chatham, since which time the modern army surgeon may be said to have developed. In 1878 the British Royal Army Medical Corps was formed.

In the United States, the early army medical records repeat the stories of the European wars—splendid achievements of individual surgeons of marked genius, but little concerted action on going into battle, and none when on a peace footing. Means of caring for the sick and wounded on the battle field and in camp long have been sadly inadequate, and improvements always have been greatly hampered by a want of proper understanding of the immutable laws of sanitary science and cooperation therein by officers of the staff and line. Until a year or so ago the young cadet at West Point was taught more of the care and health of the horse than he was of

* Read at a meeting of The Fifth Infantry, and Naval Reserve Officers' Association, at Quincy, Ill., Dec. 8, 1909, and before the Adams County Branch of the Illinois State Medical Society, at Quincy, Dec. 13, 1909.

that of the men whom he was destined to command; in other words, he was so intent on studying how to destroy the enemy that he gave no thought to saving himself from destruction by deadly internal foes. Naturally the sick soldier always has been a great impediment to the movements of the army corps, and it was never even suspected until a few years ago that most of the camp sicknesses were preventable.

It also may be said of the military operations which have been conducted by the United States more recently that a grievous failure to grasp the true relation of the medical department to the army as a whole has no doubt cost the lives of many thousands of our bravest and best citizens; for it is estimated that, in most of the campaigns of the past, more men have been killed or incapacitated by disease than by the bullets of the enemy.

What, then, is the status and duty of this organization of specially trained men who fight under the banner of the Red Cross? For, whether they enlist with the organized militia, the army, the navy, or the Army Reserve Medical Corps, their function is the same; first, the preservation of the health of the command by the prevention of disease, and, second, the prompt restoration to duty of all wounded men whose disabilities admit of a cure. Since, as already stated, more men are cut down by disease than by bullets, the first of these duties is the greater; and this fact is emphasized by the statistics gathered at the concentration camps of the United States forces during the few months that they were ordered South in 1898, where men were allowed to sicken and die who never heard the sound of battle, save perhaps in their delirium. By comparing these recent events in a modern army, composed of the flower of American youth and having every facility for care at hand, with the experiences of the Japanese army while operating against the Russians for nearly two years in a wild and foreign land, destitute of bases of supplies for the barest necessities, we find a very creditable showing for the Japanese, remarkable for its low sick-rate. The reason is that to-day no other country holds its military surgeons in such esteem and respect. This nation, just emerging from a medieval civilization, has been quick to profit by the mistakes that the western world has only gone on repeating. The Japanese called into service a scientific body of medical men and followed implicitly the suggestions of these expert sanitarians; camp sites, food, water, shoes, clothing, the personal habits of the men, their preparation for battle —every detail of the organic life of these troops was passed on by their medical department, and that untrammeled by official influence or political despotism. Its ruling was paramount—the last word on sanitation.

The scientific awakening of the last two decades and the application of the principles of sanitation to commercial and industrial life are in evidence on every hand. Large employers and manufacturers now consider it good business policy to conserve the health and energy of their operators as a factor in a larger output from their labors. So, too, this nation when it took over the reconstruction of an oppressed people in Cuba, at once found it necessary to engage in sanitary, as well as political government. Our national problems in these piping days of peace have been met more effectually than they could have been in the earlier days when our interests were less world-wide, and knowledge less complete. The addition of the Philippines, Porto Rico, the Canal Zone in Panama, and other tropical possessions has thrown a greater responsibility than ever on our military surgeons, the sanitary engineers of this country. These great responsibilities have made necessary the manning of garrisons and ships of the United States with men unaccustomed to life in the tropics, and in the successful accomplishment of this end the medical departments of all arms of the service have been ever in the vanguard, so that now these territories have been rendered habitable for troops and increasingly healthful for the natives.

General Leonard Wood, who cleaned that pest-hole, Havana, of yellow fever in less than one year, was first a well-trained physician. Drs. Reed, Carroll, Lazear and others, who, by their experiments on the nature and mode of infection of this disease, made it possible to accomplish such a miracle, were also U. S. Army officers. Col. William C. Gorgas, chief sanitary officer of the Isthmian Canal Zone, another U. S. Army surgeon, profiting by his earlier experience in Cuba, has solved the riddle of the Panama Canal, converting a death-trap and slough of despond into a veritable health resort; and thus the dream of adventurers, navigators and engineers at last is coming true. The death-rate of 176.97 per thousand, under de Lesseps, in 1885, now has fallen to 3.84 per thousand among its male white population, under the direction and control of the United States, since the venomous mosquito has been banished.

It is also interesting to note the vast amount of human endeavor that has been contributed to the public weal by the military medical officer in foreign lands, for Science truly knows no country, and to the military surgeon,

> "In all lands and thro' all human story
> The path of duty is the path of glory."

As an evidence of this fact we may recall that the first observation of the parasitic organism of malaria in the blood of malarial patients was made by a surgeon of the French army, Laveran, who worked it out in the solitude of a military hospital in far-away Algeria in 1880; although the U. S. Army Reports of 1859 show that in that year an American medical officer, John K. Barnes, had called attention to the probability that this disease was of parasitic origin. The knowledge that the mosquito is the medium of infection in malaria is of still more recent date, and this we owe to an English army surgeon, Major Ronald Ross, whose discovery has saved thousands in India alone, since he announced his theory in 1897. Another of this brave band of grim fighters of the invisible was Bruce, who, while serving the British Empire as patriot and scientist, rid the Island of Malta of Malta fever, a pestilence which had scourged it since before the days when it sheltered that gallant company of Hospitallers, the Knights of Malta.

In an address on "The Nation and the Tropics," given at the London School of Tropical Medicine in October last, Dr. William Osler so fitly has eulogized one of the leaders of these forces, "one that sought but Duty's iron crown," so fittingly that I cannot refrain from quoting the passage entire. He says:

> No one has expressed more deeply the sentiment of lonely isolation in the tropics than Ronald Ross in his poem, "In Exile:"
>
> "Long, long the barren years;
> Long, long, O God, hast thou
> Appointed for our tears
> This term of exile."
>
> Few have been able to sing with him the pæan of victory when he discovered the mode of dissemination of malaria through the mosquito—
>
> "Seeking His secret deeds
> With tears and toiling breath
> I find thy cunning seeds
> O million-murdering death."

And the pathway of victory is strewn with the bodies of men who have cheerfully laid down their lives in the search for the secrets of these deadly diseases—true martyrs to science.

What is true of the prevention of epidemic diseases which have proved decimating to troops stationed in the tropics should be equally true of typhoid fever and other camp diseases peculiar to more temperate latitudes. In the experiments carried on in the English and German armies, and on the U. S. troops now serving in Porto Rico, it has been shown that the immunity acquired by serum vaccination of men exposed to typhoid fever has decreased the sick-rate from this disease from 12 to 3 per thousand. Lord Kitchener has recently said that the improvement in the condition of the British army in India during the last ten years has been equivalent to adding more than another regiment to its strength. "In pace paratus" should ever be the watchword.

The military and political destiny of the great nations of the world is intimately bound up with the progress of medical science; for the appreciation by their people of the natural and physical laws which govern the most economical maintenance of armed forces in the event of war will keep step ever with the march of the latest scientific achievements that have any bearing on maintaining the fitness and efficiency of the individual soldier. On this will follow a fuller control and authority in all sanitary measures by the medical officer, the logical military sanitarian.

How, then, may this standard best be attained? In the national guard and naval reserve organizations we have our limitations in time of peace, by reason of the lack of opportunity for practical work in the short tour of duty in camp and afloat each year; yet in time of war we would constitute the major part of the land and naval forces, and it would be up to us to make good. We, therefore, must look to the regular forces as the working models in this work and be eternally prepared by lending our every effort to the extension of the value of tours of instruction for men, of the time of such instruction, and in the establishing of local schools for study by officers. It is a matter of regret that by reason of their smaller number the volunteer medical officers cannot avail themselves of state, or central professional medical schools for the interchange of ideas.

The needs of the situation could be met by the endowment of chairs of military surgery and sanitation in the leading medical colleges throughout the country, open and free alike to all military officers as well as to undergraduates. A natural channel affording a medium for presenting and discussing all matters germane to the subject of medico-military interests might readily be formed, too, by assigning this branch to some correlated section in the state and national medical societies, where the medical officers among the membership, and those of the army and navy at large, could get together at the annual meeting to their mutual profit and pleasure.

As a result of this activity would follow a growing interest by medical men, both of the organized and unorganized militia—for all are alike eligible for service—and a working knowledge of military medical affairs would soon engage the attention of all medical societies to an extent quite unknown now, and to the lasting good of our military organizations.

Looking toward this end, it might be wise to expand the Section on Preventive Medicine and Public Health of the American Medical Association so as to include at once its public and military phases under the heading of Section on Preventive Medicine, Public Health and Military Sanitation, or some other suitable descriptive title. The British Medical Association already has a Section of Navy, Army and Ambulance.

Perhaps the greatest need in the state militia organizations is that they be provided with improved facilities for maintaining regimental and field hospitals in conformity to the regular types to facilitate the training of ambulance companies; but this equipment is now not easily obtainable, because of the indifferent and penurious support of our legislators and their fatuous confidence in the ability of the American soldier to fight when he is called on, however unprepared. The medical officers should also seek by every opportunity to master the manual on the handling and training of men, besides all those details which administration implies. Unfortunately the civil duties of a surgeon count for little in military experience, other than in the routine treatment of sick-call; but, given an occasion, the trained volunteer surgeon should, and the regular certainly would, be competent to take over all the sanitary departments of troops in the field, assuming full charge in every particular.

Through the rare executive ability of the late Col. Nicholas Senn as Surgeon-General of the State of Illinois work was begun along these lines; for he was an authority on military medical science, having studied at first hand the methods of all the leading armies of the world; and as a result our medical department is now, perhaps, more advanced than that of any other state in the Union. It was through his personal effort that the Association of Military Surgeons of the United States and the Association of Military Surgeons of the State of Illinois were instituted; these have proved of the greatest value to the whole body, bringing into touch the brightest minds in the profession for the study of the serious problems of the organized forces.

The Army Medical School at Washington is thrown open now to volunteer officers of the land forces, admitting them equally with the regular army officers to all of its privileges, and to make it easier for them the preliminary qualifications have been waived in a large measure. A similar arrangement has been recommended by the Navy Department in connection with the Naval Medical School, especially for medical officers of the Naval Reserve; this recommendation is now awaiting the necessary legislative action. Perhaps in no other way could so much real benefit be conferred on the personnel of the state militia as through the helpful associations that these special courses offer. It is a regrettable fact that as yet but few men have availed themselves of this opportunity; possibly by reason of the loss incurred through neglect of business for several months, and the expense incident to the course, for there is now no appropriation providing for quarters and pay in the case of militia officers attending.

In the navy a new mark was set when the executive authority on the hospital ships was transferred from the line to the medical department, an arrangement which now is giving entire satisfaction. Another era will dawn when some of the traditions of the army also have been set aside and a wider advisory sphere of usefulness and responsibility granted the medical department, whereby it may become an integral unit fully manned, with complete control of all subordinates and auxiliaries, working independently and smoothly along with the fighting forces.

On the foundation already laid let us go on building according to the latest scientific attainments, until military life shall be made at least as sanitary and whole-

some as the homes that our young men leave when they enter this noble calling.

In this paper I have not sought to present the many specific duties of the medical officer as defined in the regulations, but rather to suggest the larger scope of military hygiene and sanitation, in which the members of the medical department and the officers and enlisted men of the line must labor side by side—for we are, indeed, our brothers' keepers. And, growing out of this harmony and cooperation, coupled with an awakened intelligent public sentiment, will surely blossom the perfection and preservation of an improved physique, morale and effectiveness throughout all branches of the armed forces of this nation.

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THE ARMY MEDICAL CORPS AS A CAREER

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Dr. Osler, in an address[1] before the graduating class of the Army Medical School in 1894, pictured rather clearly the general conception of the life of an army surgeon as held by the medical profession at large. In somewhat varied guises, his attitude is reflected in the advice that is apt to be given when a student of medicine, or a recent graduate, is considering the army as a career.

Also, as will appear, Dr. Osler's words indicate a lack of definite knowledge on the part of general practitioners as to the duties and opportunities of a medical officer. In beginning his address he says:

> For me the Army Medical Department, so far as particulars are concerned, means a library with unsurpassed facilities, the worth of which is doubled by the liberality of its management; a museum in which I have spent some delightful hours; an index-catalogue, which is at my elbow like a dictionary; and the medical history of the late war. . . .

Later, in attempting to cheer the surgeon who is about to enter on a career in which, as Dr. Osler intimates, there will be few cases, little opportunity for contact with medical centers and isolation from professional colleagues, he remarks on the pecuniary advantages and admonishes the beginner that "faithfulness in the day of small things will insensibly widen your powers, correct your faculties and, in moments of despondency, comfort may be derived from a knowledge that some of the best work of the profession has come from men whose clinical field was limited but well tilled." Again, he remarks that "after all, the isolation is neither so enduring nor so corroding as might have befallen your lot in the routine of country practice."

That a physician of such broad knowledge and such keen perceptions should have held these views is not surprising, for few physicians in civil practice have opportunities of observing the medical service at army posts. They argue that, since soldiers must be physically sound on enlistment, there can be comparatively little disease except that of venereal origin. As a result the advantages of the regular and sufficient pay must be balanced against a very narrow professional experience.

This article is not intended to create an impression that the average soldier is an invalid. Nor is it desired to intimate that the army surgeon is constantly holding clinics of peculiarly interesting cases. But by emphasizing the fact that an army post contains not only soldiers but also women and children, and by briefly outlining the manner in which the physicians are selected and trained for the corps, I hope that I may show that the isolation from professional colleagues is not serious, and that the entrance into the medical corps does not signify a future "professional degeneration"—a prophesy I have heard often expressed.

1. Osler, William: The Army Surgeon, in Æquanimitas and Other Addresses, p. 103.

EXAMINATION AND PREPARATION

On entering the medical corps at the present time a physician must pass, with an average of 80 per cent., a preliminary examination usually covering a period of six days. This consists of a physical and professional examination. If successful, the candidate is commissioned as a first lieutenant of the medical reserve corps until his graduation from an eight months' course at the Army Medical School in Washington. During this probation period he receives $2,000 a year, an allowance of $36 a month for quarters, and an ample allowance for fuel and light. At the school excellent courses requiring thorough preparation and diligent attention are given in clinical microscopy and bacteriology, military hygiene, military surgery, military and tropical medicine, sanitary chemistry, operative surgery, ophthalmology and optometry, *x*-ray work, hospital corps drill, and duties of medical officers, medical department administration and customs of the service. The scope of these courses may be realized when it is mentioned that a recent graduate in medicine who had studied under Professor Ziegler of Freiburg and Professor Welch of this country found no opportunity for reminiscences during the hours devoted to pathology and bacteriology. On graduation the officer is commissioned in the medical corps as a first lieutenant. His pay for the next three years, until his captaincy, remains the same. On changing station, mileage at the rate of 7 cents a mile is allowed, and 5,100 pounds of household effects are crated and delivered to his new post. A leave of thirty days is obtainable each year.

The professional opportunities of the service are not fully appreciated by the profession at large, so it may be permissible to comment on the range of diseases which may be met in this country. In contrast to the rather general impression, venereal cases play quite a subordinate part in the sum total of disease at a post. There is, to be sure, venereal disease, but a routine treatment is usually adopted, and after the diagnosis is assured there is little attention paid to this form of sickness. Records are kept for reference and syphilitic patients are compelled to continue treatment for a definite period after leaving the hospital. Under existing army regulations this is easily possible, whereas in most civil clinics the patients are lost track of after a month or so. Accordingly, even with treatments covering long periods, little time has to be devoted by the surgeon to venereal disease. This is fortunate in that a surgeon has ordinarily many other cases requiring study and thought. When one considers that on an average post there are from 50 to 100 women, counting the wives and relatives and servants of the officers and non-commissioned staff, 25 or more children and usually from 300 to 800 men, it may be seen that a surgeon has a rather varied practice in general medicine, surgery, children's diseases, gynecology, obstetrics and other specialties. Instead of a narrow practice confined to a few cases, it is extremely general.

RANGE OF PRACTICE

Reviewing the cases of three months at a certain eight-company post, one notes the following cases:

Diseases of the Mouth, Tonsils, Pharynx and Esophagus.—Mercurial stomatitis, ulcers of the tongue and mouth, alveolar abscesses, tonsillitis, diphtheria and pharyngitis.

Diseases of the Stomach, Intestines and Peritoneum.—Gastritis, acute and chronic, gastralgia, constipation, diarrhea, gastroenteritis, enteritis, colitis, peritonitis, appendicitis and malnutrition and digestive disturbances caused by the presence of nematodes and cestodes.

Diseases of the Genitourinary Tract.—Uremia, chronic parenchymatous nephritis, tuberculosis of the kidney, rupture of the bladder, cystitis, gonorrhea, pelvic inflammation, vaginitis, urethritis, endometritis, prolapsus uteri and syphilitic infections in practically all forms.

Diseases of the Circulatory and Respiratory Systems.—Angina pectoris, endocarditis, mitral insufficiency, aortic stenosis, bronchitis, asthma, lobar and lobular pneumonia, pleurisy, pleural effusion and filaria nocturna.

Other Diseases.—Rheumatism, tuberculous adenitis, scabies, sciatica, lumbago, alcoholism and neuralgia.

Conditions Requiring Operative Measures.—Ruptured bladder, appendicitis, placenta prævia, retained placenta, tuberculosis of kidney, osteoplastic cranial operation for bullet wound of cranium, fractures and minor injuries.

A careful comparison with previous periods shows that this range of cases during the past three months is not exceptional at this particular post, and yet, comparatively speaking, this station referred to is by no means a large one.

EQUIPMENT OF HOSPITALS AND PROFESSIONAL OPPORTUNITIES

All hospitals are thoroughly equipped for every kind of surgical work, and the medical department supplies all needs. In most posts there are also *x*-ray machines and full photographic equipment. The laboratories contain every instrument for clinical study. Original investigation is encouraged, and to those following the progress of tropical diseases it is needless to enumerate the important researches that have been completed by army surgeons.

At each hospital the leading American and several foreign medical journals are received regularly. From time to time additions are made to the hospital libraries, so that an army surgeon finds a rather complete library awaiting him at each post. Should any special work be deemed necessary by the surgeon, it is forwarded by the medical department. This would surely indicate that a physician in the service who allows himself to neglect professional studies has himself and not his environment to blame, and such a man would probably remain in the service only until his next examination for promotion. Additional stimulus to study is also found in the fact that frequently surgeons who manifest an especial interest in any particular branch of medicine or surgery are sent to medical centers where their studies can be continued.

As for the isolation referred to earlier in this paper, it is possible that at times a surgeon may be the only physician at a post, but this is rather exceptional at present, and the tendency is to concentrate troops, and have larger hospitals and more medical officers.

When in time the medical profession learns of the true position of the army surgeon, of his excellent opportunities for professional development and of his incentive to serious study, then the advice to the medical student will be to enter this career, which offers such exceptional chances for successful study and research.

PELLAGRA

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Not the least interesting feature of the medical history of recent times, which has been so fertile in sensational scientific events, has been the sudden coming to the front of the problem of pellagra. Except in the experience of a few practitioners who occasionally encountered undisputed cases of pellagra, this disease had passed almost unnoticed for a number of years; but it has of late suddenly assumed in medical and public attention a rank hardly equaled by apparently more important public problems.

It is not desired to detract in any way from the importance attached to pellagra as a direct and serious danger to public health, a danger which is but too well attested by experience in the past and in other countries; but it may very well be that, on account of the recent discovery of a considerable number of cases in this country, and especially through sensational disclosures, mostly through the lay press, the situation has been made to assume an aspect more serious than is really justified.

The problem of pellagra is surrounded with such difficulties and obscurities that much study should be given to it before attempting to formulate definite conclusions. Scientific circumspection is the more strictly to be enjoined in that, in addition to the novelty and the unfamiliar aspect of the disease, by far the greatest number of observations have been made in hospitals and insane asylums where patients have drifted at last in the advanced stages of the disease, or else when suffering from very complex ailments. Under such circumstances the picture of the disease would naturally be obscured or distorted and the diagnosis, even by the most experienced observer, would be difficult. It is assumed that this accounts for the harrowing pictures of the disease lately drawn and for the pessimism largely prevailing in regard to pellagra.

However conflicting on some particular points, and however much wanting the evidence may be under particular circumstances, it cannot be denied that those observers who have given the closest attention to pellagra have all looked on alimentation by damaged corn as the cause of the disease. Furthermore, those countries of the old world that have been forced to a determined fight against pellagra have all centered their means of defense on that theory, and it has rewarded them with such a fair measure of success as to encourage them to continue the fight on the same lines. The occurrence of analogous intoxications from other kinds of damaged grain, such as ergotism, furnishes a strong argument in favor of accepting zeism as a factor in the pathogenesis of pellagra.

Pellagra was first noticed in Europe in the countries situated near the natural northern limit of corn culture, where the ripening of the grain was often imperfect. The variations in the severity of the disease seemed to correspond with variations in the crops. Thus, after an unseasonable year, the disease would break out in sudden explosions in the spring and assume an epidemic character, and then with the coming of better crops its violence would abate and only sporadic cases would occur.

Much is to be learned from the extended experience of European investigators whose studies on this subject have extended over a century and a half.

It is an endemic trophic disease of toxic origin, especially with vernal manifestations, and characterized by

gastrointestinal, cerebrospinal and cutaneous manifestations. In its attenuated or light forms, pellagra may be ushered in by languid, tired feelings, disinclination for any kind of work, more seldom by nausea and vomiting. A few patients may experience a particular feeling of heaviness about the head or of vertigo, a look of sadness or rather of mental depression, as evidenced by the apathy displayed, or by the neglect of duties hitherto cheerfully discharged. Most often pellagra has no precursory symptoms and the disease is at once ushered in by its cutaneous manifestations. The regions most commonly affected are the dorsal surfaces of hands or feet, upper parts of the chest and sternum, the neck, and such parts of the arms and legs as are usually uncovered. Very seldom is the face affected.

The cutaneous lesions of pellagra must be considered as *erythema solare*, the result not of heat, but of the actinic rays at the violet end of the spectrum. These lesions, beginning with the spring, sometimes sooner if the winter happens to be mild, confine themselves to the unprotected parts of the skin, lasting generally during July and August, to desquamate in the fall, leaving during the winter and until the next vernal exaccerbation a glossy, erythematous skin. Gaetano Strambio, in the latter part of the eighteenth century, noted that by protecting the already affected skin against insolation it can be restored to its normal condition, but the patient does not escape from the other effects of the disease. The cutaneous lesions reappear the following spring and may thus recur for several years.

In the severe forms the gastrointestinal symptoms are more pronounced, including stomatitis, vomiting and diarrhea. The nervous system is more gravely affected, depression and melancholia being extreme and diplopia, vertigo and hallucinations being experienced. A feeling of heat, muscular contractions, involuntary movements, convulsions and epileptiform attacks are observed. There is extreme weakness, especially of the back and lower limbs.

These symptoms, marking a gradual degeneration or at least an impairment of the nervous system, may be associated or not with delirium. This delirium may manifest itself under two forms—acute and chronic. The acute form may prove fatal in a few days and is attended with a high fever and a hard and vibrating pulse. Some patients are dejected and gloomy, refusing to eat and drink or even to answer when addressed. Others are noisy and obstreperous, or even furious and turbulent, and many, according to Strambio, by moving the head to and fro seem to imitate the tolling of the bells. The chronic delirium—pellagrous mania—according to the same author, assumes different forms. One of them is a kind of dementia; another form is marked by a loss of memory and attention—amnesia—and a third, much more common, is a melancholia, most often religious, with an impulse toward self-destruction, especially by drowning—hydromania. This chronic delirium is almost always incurable, though it sometimes disappears after several years of existence. In the insane asylums of some Italian provinces pellagrous maniacs constitute a considerable proportion of the inmates. According to Marie, pellagrous insanity is on the decrease in France. In other countries the number of pellagrous insane is always considerable.

To such incurable and desperate states of organic degradation has been given, in the Italian hospitals, the name of *tabes pellagrosa*, the exact meaning of which should be more precisely defined. We are here dealing with a most important point concerning pellagra and one that has contributed in no small degree toward obscuring the diagnosis and causing the disease to be misunderstood. The denomination of tabes pellagrosa has been applied to two different states, one of which is but the last degree of pellagrous intoxication. The other represents, so to say, one mode of its termination, when the toxic infection, having accomplished its deadly work, leaves the system in a cachectic condition similar to that caused by any other dyscrasia in its ultimate state, or by any other process of denutrition.

If the statement of T. Roussel is adopted as true, that most pellagrins found in an incurable state in the hospitals and insane asylums belong to this second category, there is uncovered one of the main sources of error which has caused pellagra to be mistaken for and mixed up with all sorts of cachectic conditions, thereby giving rise to those diagnoses so lightly formulated and so unjustly multiplied, pellagra of the insane, sporadic pellagra, etc.

From the foregoing I may conclude that pellagra is not to be considered, as has been done by so many observers, and is still done, as an ill-defined pathologic condition, a kind of diathesis, a gastrointestinal affection accompanied or followed by various nervous accidents, but rather as a clearly defined affection characterized by phenomena which plainly can be divided into two successive pathologic states: first, a primitive toxic, chronic disease, with vernal manifestations, the progress and degree of which are governed and determined by the occurrence of repeated intoxications; second, a cachexia and a consecutive morbid state resulting from the intoxications and from mixed debilitating conditions through which the toxic disease has been originated and has developed itself.

Now that pellagra has been raised to the high importance of a national hygienic problem and the attention of the medical profession centered on it, there can be no doubt that the obscurities that still surround it will soon be dispelled and a flood of scientific light thrown on it.

A STUDY OF THE ADMISSIONS TO THE U. S. MARINE-HOSPITAL, CHICAGO

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The following statistics as to the change in the admission rate for certain diseases during the past twenty-five years among the patients in the United States Marine-Hospital at Chicago are believed to be of some interest.

Hospital statistics are not usually very interesting, and are, moreover, apt to have their values seriously impaired by the difficulty in estimating rightly the effect of the many factors which qualify their apparent import, as lack of definiteness in diagnosis, changed conditions as to staff, or varying character in the patients.

The figures for the Marine-Hospital at Chicago, however, as for the other hospitals of the service, while perhaps of no more interest than others, are singularly free from difficulties due to variability of attendant conditions, and this for the following reasons:

1. All diagnoses are made in strict accordance with an official nomenclature.

2. The patients are drawn from persons of one definite occupation and are almost all adult males between 21 and 50 years of age.

3. The method of recording the facts is uniform and fixed.

I doubt if there are two dozen civil hospitals in this country in which the class of beneficiaries, the system of record, and the nomenclature have remained so nearly uniform for twenty-five years.

The diseases selected for investigation were: (1) those among which any marked change in incidence would indicate some distinct change in sanitary, climatic or social conditions; and (2) diseases not appreciably affected by such conditions, diseases whose very uniformity of incidence would serve to make more striking change in admissions for the diseases of the first group.

In the first class I have placed enteric fever, malarial fevers, rheumatism (acute and chronic), syphilis, tuberculosis of lungs, acute bronchitis and pneumonia; in the second, cardiac diseases and kidney diseases.

About one in four patients applying for relief at our dispensary are sent to hospital; others receive treatment as out-patients, and only the actual hospital admissions have been considered. These vary in number from year

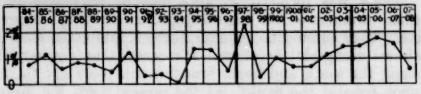

Chart 1.—Percentages of admissions for diseases of the kidney.

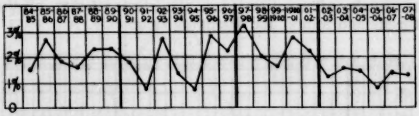

Chart 2.—Percentages of admissions for cardiac diseases.

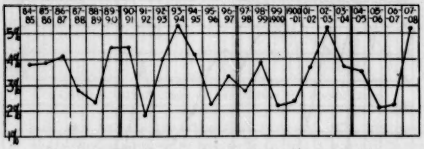

Chart 3.—Percentages of admissions for bronchitis.

to year; the average for the twenty-five years has been 560, the figures varying in round numbers from 400 to 800. The year is the "fiscal year," July 1 to June 30.

One very striking fact is that among 13,500 admissions in twenty-five years there were only 9 cases of diabetes.

The charts for the diseases in the second group are first given, and a glance at them shows at once just such a lack of change in incidence as had been expected. The percentages vary a little from year to year, but the range above and below the mean are about equal.

The charts given by the diseases of the first class are found to fall naturally into two divisions: (a) those whose percentages are found to have been little, if at all, affected by changes in sanitary and other conditions, though their character would have led one to expect differently, namely, bronchitis and pneumonia; and (b) those whose percentages show very distinct changes.

I confess that I am somewhat surprised at these figures. For reasons to be explained in connection with the rheumatism table, and because the development of the use of the microscope for discovery of tubercle bacilli has eliminated many cases that might formerly have been diagnosed as bronchitis, I had expected that the table would show a progressive decline in the admissions for bronchitis, interrupted here and there by the occurrence of increases due to influenza epidemics.

The increases of the influenza years are, indeed, shown, but the expected decrease does not appear.

The same remarks apply to the pneumonia rates.

The enteric fever table shows just what was expected: a rise, a decided fall and then a steady increase, the initial rise and decline coinciding closely with the condition of the city water before and after the opening of the drainage canal, the steady rise of the last four years being a part of the well-known, but not completely explained, rise in the enteric rate among the shipping around the great lakes. The final figures leave the rate 4 per cent. against 1.4 per cent. twenty-five years ago.

The tuberculosis chart is something like the enteric chart: a sharp rise, a sharp fall, a fairly even average for a number of years and then a steady rise.

Now, there are certain facts to be considered in connection with this chart. First, the sudden fall in the number of admissions from 1889 to 1892 (from 9.4 to 4.4 per cent.) coincides exactly with the general intro-

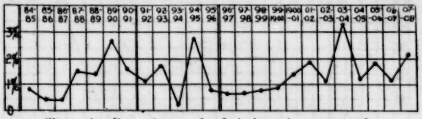

Chart 4.—Percentages of admissions for pneumonia.

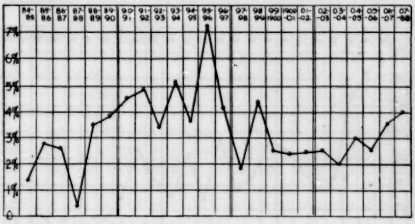

Chart 5.—Percentages of admissions for enteric fever.

duction of the issue of modern microscopes to the service hospitals and the general introduction of the practice of examining sputum. One would have expected that this would have resulted in a sharp rise in the admission rate; on the contrary, it dropped more than 50 per cent.

In 1897-1898 the service opened at Fort Stanton a sanatorium for its tuberculous cases, and from 1901 probably 33 per cent. of the cases have been sent there, the percentages for the last three years being 40, 35 and 56.5.

Formerly patients were admitted, improved and were discharged, and were readmitted, possibly more than once, either here or at some other service hospital, each time of admission counting necessarily in the tables as a new case. I am sure that at least 15 per cent. of the admissions for tuberculosis prior to 1900 were readmissions. It follows thus that for the decade from 1890 to 1900 the net admissions were just about 4 per cent. and were strikingly uniform in number. Now, from 1900 on, the readmissions of patients coming in the same year as original admissions ceased to be an important factor. Yet just at this time apparently begins the steady increase of from about 1.5 to 2 per cent. a year.

Turning to the out-patient figures, we find that their numbers have decreased to the vanishing point; last year there were three, and year before none. Now, of course, this is due to the policy of treating as nearly as possible all cases of tuberculosis in hospital, a policy I have strongly enforced for the past four years, and I have, therefore, examined the out-patient figures for a number of years back to see if they gave any explanation of the gradual rise in the admission rate.

They do not explain it; on the contrary, they emphasize it, for the total out-relief and hospital relief in 1898, the year before the segregation plan got to working, was exactly the same as last year, when the system had been ten years in operation. Moreover, the figures which I have prepared for the whole service during the past twenty years show a decline in the amount of tuberculosis treated.

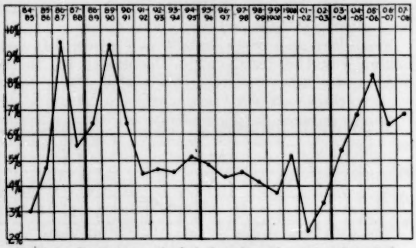

Chart 6.—Percentages of admissions for pulmonary tuberculosis.

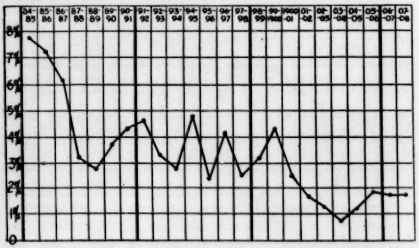

Chart 7.—Percentages of admissions for malaria.

The Chicago figures, therefore, seem to indicate clearly an increasing prevalence of pulmonary tuberculosis among the merchant seamen frequenting the port, in the face of a declining rate for merchant seamen generally.

We come now to the three most striking results of the investigation, viz.: the charts for malaria, rheumatism and syphilis.

The malaria chart illustrates strikingly the necessity of understanding all of the qualifying circumstances if one hopes to make intelligent deductions from medical statistics; it also illustrates how often such qualifying circumstances are entirely outside of the normal professional horizon—are, in fact, dependent on economic or industrial causes. At first glance it shows a very striking and steady decline in malarial admissions, from nearly 8 per cent. of the total to below 2 per cent., in round number a decline of admissions for malaria of 75 per cent., giving the impression of a great improvement in the prevalence of malaria about the lakes.

There has certainly been a great improvement in this respect as far as concerns Chicago and vicinity, for twenty to twenty-five years ago there were suburban sections and sections along both north and south branches of the Chicago river which were distinctly malarious; but the two main factors in this improvement are industrial. They are the decline in steamboating on the lower Mississippi and the rise of the great lumber, iron, copper and transportation corporations engaged in business about the lakes.

Formerly when navigation closed on the lakes there was an extensive migration synchronous with that of the ducks and geese. When serving at St. Louis, Cairo and Memphis I came to know a good many of the regular migrants who came and went year after year, but the migration was then already becoming a thing of the past.

It was these men who, coming north infected, formerly furnished a large quota of the malaria which was responsible for from 6 to 8 per cent. of our admissions. We still get a few such cases every year, but not many.

There was formerly a large fleet of schooners and small steamers on the lakes engaged in carrying lumber, etc. They entered the smaller harbors, and often loaded almost alongside the shore. Moreover, they discharged along the south and north branches and were apt to lie some time at the bank. At the present time the large steamers load mechanically with great rapidity at great terminals, often miles from the close vicinity of the forests and mines, and discharge as quickly.

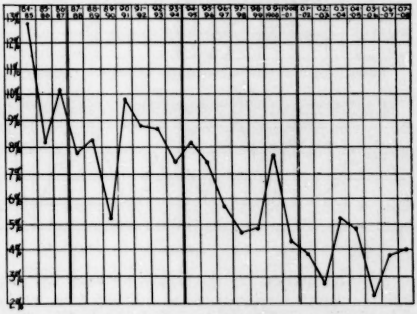

Chart 8.—Percentages of admissions for syphilis.

The chart mirrors these changing conditions very clearly. The decline in the river shipping was rapid after 1885 and coincides with the sharp drop in the curve. Then for about ten years this apex vibrates up and down with fairly even excursions above and below 3.5 per cent; and, finally, there comes the sharp decline of the past decade, coinciding closely with the rise of the great companies and the disappearance of the schooners.

Here at last in the syphilis chart is one which can be considered entirely on the basis of the sanitary or medical facts in the case; and I cannot see how it can fail to interest greatly those concerned with the "venereal peril." Here are the figures of admissions for twenty-five years among 13,500 young adult males of as nearly as possible the same class and suroundings, and they show a decline from 13 per cent. to 4 per cent. of the admissions, and a steady regular decline as well.

A word as to diagnosis. The service regulations require that the cause, not the manifestation, of a dis-

ease be stated. That is, for example, a tabes due to syphilis is entered "syphilis, secondary," and under "subsequent complications" it is entered "tabes," in brackets. This is the uniform and prescribed system; so the question of terminology cuts no figure in the result shown by the chart.

The decline is certainly not due to increase in the morality or sobriety of our beneficiaries, nor in their character; indeed, the latter has declined, the English, Irish and American sailors having to some extent given place to a very low order of foreigners. These last possibly drink less whisky and certainly fight less than their predecessors, but I think that they are less often married.

What, then, is the cause? Three solutions suggest themselves:

1. A decline in the prevalence of syphilis.

2. An improvement in diagnosis and treatment, resulting in fewer of the severe eruptions and crippling, late lesions.

3. An attenuation of the virus by reason of a more general syphilization of the class.

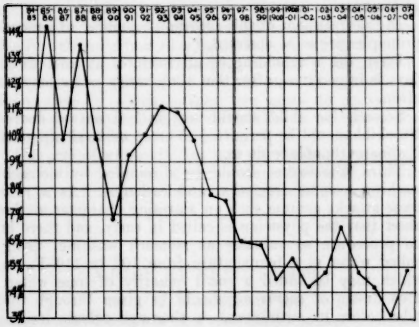

Chart 9.—Percentage of admissions for rheumatism.

I do not believe that the first is true. The statistics of the country generally are said to tell a very different story.

The second explanation is unquestionably sound. We, like the profession at large, twenty to twenty-five years ago did not so accurately draw a distinction between chancre and chancroid, and so more patients remained without constitutional treatment until their secondary stage was well developed; moreover, the very number of such cases made us less considerate of the individual patient, and they were discharged earlier and were hence more apt to relapse in later years.

The third reason is the one which, I think, is mainly responsible for the decline. It is a personal opinion merely, I know, but I have held it for some time; and, indeed, I began this inquiry because I thought that the syphilis I was seeing seemed much diminished in severity and I debated whether the cases were really fewer as well as lighter. This is not the place to argue the matter, but I state it as my opinion that there has been a decline in the severity of syphilis due to the wider prevalence of this disease—in other words, to an attenuation of the virus.

In Chart 9, again, is a chart that is worth attention. The steady and almost uniform decline is most remarkable and the cause is as plain as the results are striking.

The decline in rheumatism is the direct result of the enormous improvement in the conditions under which the men work and sleep. Gone are the sailing vessels and small steamers with their drenched decks, hours of exposure on watch and the turning-in in cold, damp, unheated forecastles. The absence of work aloft and on deck on the steamers and their higher free-boards have radically changed the conditions on watch, and the living quarters are comparatively warm and dry.

Looking back at the bronchitis and pneumonia charts, it will be noticed that these diseases have somewhat increased, and it was stated in that connection that this was a surprise at first. On reflection, however, it appears that the reason for these increases is the same as that for the decline of rheumatism.

The sailor has been replaced by the fireman. He escapes the diseases associated with cold and exposure; he does not escape those due to sudden exposure when overheated.

THE PROPHYLAXIS AND TREATMENT OF GASTROENTERIC TOXEMIAS OF BOTTLE-FED INFANTS IN SUMMER

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One-third of all infants born into the world die before the third year, and the majority of these deaths can be attributed to gastroenteric toxemias of summer. About 85 per cent. of these deaths occur among bottle-fed infants.

In preventive medicine we encounter social as well as medical problems. The saving of the lives of infants from preventable disease is as much a social as it is a medical problem—so long as tenement builders are permitted to construct dwellings for human habitation without regard to provision for adequate systems of light or ventilation, and are allowed to fill them from basement to garret with men, women and children huddled together like sheep or cattle. So long as cities and municipalities permit the sale of unwholesome milk just so long will infant mortality be a stigma and a disgrace on our state and national life.

The saving of the lives of these infants is a greater problem than that of race suicide, and an infinitely more practical one, and as such demands the attention, not alone of medical men, but of public men, high in authority, who ought to be engaged, a portion of their time at least, in enacting laws safeguarding the lives of infants.

In the cities of Ohio, with but few exceptions, health officers are more concerned with the problem of unwholesome milk than with congested tenements, with their accompanying filth, squalor, foul air and poverty, since these latter conditions do not prevail to any extent.

Certified milk is fast coming to the rescue, and is the means, no doubt, of saving many lives, but its imperfect system of production and delivery and the higher cost often place it beyond the reach of the poor families who need it most. Moreover, it has other disadvantages; the babes who are fed on it are constipated and do not thrive; nor do they show the same rate of gain as do infants fed on less wholesome but fresher milk. These disadvantages are slight, however, when we consider the greater freedom from nutritional troubles which certified milk assures. In Akron a splendid plant is in operation for the production of certified milk, and the health board bacteriologist informs me that the bacterial count

is as low as 7,000, while ordinary milk being sold in the city shows a count of 2,000,000. There has been some trouble with the delivery system. Some of the milk is 24 hours old when it reaches the consumer, and when kept for use another 24 hours, or 48 hours in all, it is entirely too old for infants during the hot months, unless we can be absolutely sure of its proper handling before and after delivery. I am informed that the bottles are to be stamped in the future, so that the consumer may know the age of the milk when received. This I consider a most vital matter.

Certified milk holds an important place in the reduction of infant mortality, but it cannot compare with reasonably clean milk fresh from the cow as a food for infants at any season of the year. Many cows are kept in the city of Akron and its immediate vicinity, and I have been advising families either to own a cow or to get milk from some neighbor's cow for the baby's use, instructing the mother in detail as to its proper care and preparation. I have yet to see a single case of infection from milk so obtained and cared for. It will be objected that there are only a comparatively few people who can obtain milk in this way, and this is true; but, on the other hand, there are many who could obtain such milk who are not now doing so chiefly because they are told that certified milk is the best obtainable for the baby, which is only true when fresh milk is not to be had. If certified milk for any reason is also out of the question, and ordinary milk must be relied on, then let it by all means be pasteurized during the excessively hot weather. Most of the objections to pasteurized milk are of but little consequence, since it need be done only for a period of three months; moreover, mothers can be taught to pasteurize milk by some simple home method.

At some future day we shall be able to procure wholesome milk at a moderate cost. The various milk commissions and health protective societies and organizations of like nature are carrying forward the work of education to such an extent that people are beginning to demand clean, wholesome milk, and the dairyman is coming to understand that unless he produces it he will be driven out of business by the stress of competition.

When the milk question is once solved, then the greatest of all factors in infant mortality shall have been conquered.

Mothers should be taught the great value of keeping the baby out of doors night and day during the hot months. This I consider next to clean milk in importance. The more fresh air the infant gets the better will be its digestion. I have repeatedly seen infants who were unable to digest properly any modified food mixture when kept indoors, go on to perfect digestion and assimilation on precisely the same modification when the tonic effect of fresh air was added by keeping the baby continually in the open air. Babies do not get fresh air enough, ill or well. "The catch cold fear" of most mothers is so firmly grounded that it will require generations to overcome it, but the fresh air camps, day nurseries and other fresh-air organizations are accomplishing much in the way of education, though much teaching yet remains to be done.

Heat is another factor in the production of gastroenteric disease—a temperature range of from 74 to 90 F. degrees being especially dangerous. I discovered that most of my cases of infection resulted from the 10 p. m. feeding, due, in my opinion, to two factors—the milk is older at this time and the nursery excessively hot. I found that during the hottest nights of last July the temperature of the average upstairs sleeping room was 10 degrees higher than the air on the downstair porches; for example, when the temperature was 81 F. in the nursery at 10 p. m. it was found to be but 71 on the downstair porches. To put a baby to bed in a room at 81 F. invites an attack of indigestion by heat depression and by raising the child's temperature to such an extent that the growth of pathogenic bacteria ever present in its alimentary canal are thereby favored, and when to this is added warm milk, 24 hours old or older, the conditions are most favorable for an attack. On the other hand, if the child is placed out of doors on a properly protected and screened porch to spend the night, with the temperature at 71 F., and gradually dropping, the factor of heat is eliminated, and the infant's digestion is assured by the stimulating and tonic effect of the fresh air, and therefore the danger of night infection is reduced to the minimum.

Over-feeding is best avoided by giving the baby an abundance of fresh boiled water to drink. The destruction of flies is important. Good serviceable screens are a good investment. Light clothing and frequent cool bathing are essential. Unceasing diligence in all hygienic matters is paramount in the prophylaxis of gastroenteric toxemia.

In the treatment of this infection a number of general principles are to be observed.

First, the withholding of all food for at least three days is imperative; after that time barley water may be given.

Second, the child should rest in bed out of doors. No child should be permitted to creep or to sit up even if apparently able to do so.

Third, the toxins should be eliminated by stomach washing, colonic irrigation and catharsis. As a rule these attacks assume such an alarming character at the onset that the physician is called in early, and there is no procedure so valuable as stomach washing, using boiled water at a temperature from 100 to 110 F., to which may be added a small quantity of lime water. Two drams of castor oil should be given through the tube before its withdrawal—a thorough colonic irrigation should follow, and after the stomach is settled cooled boiled water may be given freely by the mouth. This is all that is required in the majority of cases, and the child will be apparently well in three or four days. In cases seen a little later, stomach washing is not indicated unless that organ is irritable, but colonic irrigation should be done every four hours the first day of treatment—after that twice daily is usually sufficient. This should be followed by nutritive enemata at intervals of four hours. The rectal feeding should be continued until it is safe to begin feeding by mouth. If the rectum protrudes and becomes irritable, the application of a 5 per cent. ointment of cocain will be found efficacious. Calomel should follow the oil, but the less medication used the better. These infants are over-drugged, and thus the irritation is increased and prolonged, especially by calomel. Abt,[1] of Chicago, has recently shown by a "series of experiments the irritating effects of the common cathartics on the intestinal mucosa of infants. The benzidin test was used for blood. Calomel, magnesium sulphate and castor oil were the cathartics given. Both blood and mucus were shown in the stools after a few days. Calomel produced the greatest amount of irritation." When we consider how delicately the intestinal mucosa of an infant is constructed, it is well to be cautious in the administration of cathartics.

1. Archives Pediat., November, 1909; abstr. in THE JOURNAL A. M. A., July, 1909.

Fifth, of measures to control temperature and restlessness, a tub bath is the best. The child can be in the tub from ten to twenty minutes out of every two hours if necessary. An ice cap to the head is useful.

Sixth, the following measures may be used to allay the inflammation: In addition to rest in bed and after thorough cleansing of the alimentary canal, bismuth subnitrate may be given, from 1 to 2 drams daily, for a child one year old. Salol, 1 or 2 grains every three hours, is of some benefit as an intestinal antiseptic. Opium is indicated if there is much pain and continued frequent stools. It has been used too freely in the past and should not be given at all if cerebral symptoms and high temperature are present. Opium is useful in convalescence, when the taking of food is followed by a movement of bowels. In cases of a cholera infantum type with threatened collapse, it may be given hypodermatically in the form of morphin sulphate, 1/100 of a grain, with 1/1200 grain of atropin. This dose is suitable for a child of one year. For the prostration so often present, brandy should be administered by adding it to the boiled water, which the infant takes to allay thirst—½ oz. in 24 hours. Hypodermoclysis may be necessary in the graver cases. During convalescence tonics are indicated, and beef juice should be given freely. Organic iron in a liquid form to which is added Fowler's solution is a convenient method of administration. Lastly, removal to the country or seashore in those cases in which relapses are prone to occur will accomplish more than anything else in restoring the infant to health.

The use of antitoxin has not yet reached a practical basis in the treatment of gastroenteric disease of infants.

I have, therefore, omitted its consideration in the preparation of this paper.

INJURY BY ELECTRICITY*

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In view of the widespread and increasing industrial use of electricity it is not surprising that electric trauma is on the increase and that cases thereof are being cited in medical publications. Despite this, authoritative information as to the physical effects of electricity is very scanty,[1] especially in American literature. In Germany (notably through the investigation of Jellinek[2]) and in France and Great Britain, there has been much preliminary experimentation and subsequent case reporting by physicians; but in this country investigation has been limited almost solely to electric engineers, and case reports have been few in number. This is my excuse for bringing the subject before the section as this paper aims to narrate what has been learned from personal observation and a very considerable search of the available literature.

TECHNICAL TERMS

For an intelligent understanding of the matter, it is necessary to know some of the usual technical terms, and they can be stated thus:

The *volt* is the unit of pressure. The *ampere* is the unit of strength. The *ohm* is the unit of resistance. The *coulomb* is the unit of quantity.

But for all practical medical purposes it is enough to remember that volt is the unit to express pressure, intensity or electromotive force; and that the ampere denotes strength or current quality. The volt is the impelling force which moves the electricity through any conductor. The ohm is the unit of resistance and expresses that quality of the conductor which resists the passage of electricity through it.

Electricity flowing through any conductor is impelled by the voltage of the circuit and is opposed by the resistance of the conductor. The size of the current which flows is directly proportional to the voltage and inversely proportional to the resistance. This "size" is measured in amperes, the ampere being the unit of current, and its numerical value is found by dividing the volts by the ohms; (A=V/O; "Ohm's Law"). Ordinary conductors carry currents of three varieties: direct (or continuous); alternating; and interrupted.

The contact may be of four kinds, viz., *positive*, where the body is firmly and constantly pressed against the conductor; *partial*, where the contact is slight and steady; *brushing*, where the contact is slight and for a short interval, and *arcing*, where the current reaches the body via a vapor through which the current passes. The *intensity* may be (1) *low* (100 to 300 volts); (2) *medium* (400 to 600 volts); *high* (1000 volts and over); this classification being that adopted by Prevost and Batelli, of Geneva, as the outcome of many experiments.

The *duration of contact* may be (1) *short*, from one to five seconds; (2) *medium*, from five to eight seconds; and (3) *long*, from eight seconds upward.

Mode of receipt is generally by charged (1) wires or rails; (2) metal apparatus or tools; (3) flashes or arcs which are productive of burns only.

The average electric pressure in electric lighting is from 100 to 225 volts (direct), usually about 110 volts; in overhead and underground trolley systems from 500 to 600 volts (direct); suburban lighting circuits 1,000 to 2,000 volts (alternating); series arc lighting circuits 2,000 to 4,000 (direct or alternating); in overhead, long haul railway systems (as the N. Y., N. H. & H. R. R. Co.) 11,000 volts (alternating). In the third rail systems, like the local subway, the voltage is about 550 (direct). The highest voltage transmitted by wire in this country is that generated from Grand Rapids, Mich., 100,000 volts. Another system in Denver transmits 88,000 volts, and one in Los Angeles 75,000, and that from Niagara Falls 60,000.

A voltage of from 200 to 500 is usually not dangerous, but the alternating current is considered to be more dangerous than the direct. In the electrocution of criminals from 1,300 to 2,000 volts are used, the average being 1,700 of the alternating type.

FACTORS INFLUENCING PHYSICAL EFFECTS

The physical effects are mainly determined by the following:

1. Amount and duration of current.
2. Site, type and area of contact.
3. The individual.

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* Read before the Surgical Section of the New York Academy of Medicine, March, 1909.

1. In addition to the subsequent numbered references the following may be consulted:

Batelli, F.: Rev. méd. de la Suisse romande, 1902.
Cleaves, M. A.: Ref. Handbook Med. Sc., iii, 742.
Crile and Macleod: Am. Jour. of Med. Sc., 1905, p. 417.
Cunningham, R. H.: New York Med. Jour., Oct. 21-28, 1899.
Jones, H. L.: Brit. Med. Jour., 1895, i, 468.
Lloyd, J. H.: Med News, Nov. 24, 1894.
Mills and Weisenburg: Univ. Pennsylvania Med. Bull., March and April, 1903.
Spitzka, E. A.: New York Med. Rec., Jan. 4, 1902; Proc. Am. Phil. Soc., 1908; Jour. Med. Soc. New Jersey, 1909.

2. Jellinek, S.: Numerous articles in German medical journals.

Amount and duration of current is the main essential, and the greater the degree and the longer the duration, the greater the effect. High voltage, long duration and positive contact generally predicates coma, severe systemic shock, burns and oftentimes death. Medium intensity, with medium duration and partial contact, generally means burns of the second or lesser degree, less profound coma and shock with more or less paresthesia, especially numbness and tingling. Low intensity, with short duration and brushing contact generally means burns of the first degree or none, slight, if any, coma, and moderate paresthesia mainly of the tingling type. Low intensity, with brief duration and partial contact, generally means absence of burns or systemic symptoms, paresthesia of the formication type being generally alone complained of.

Amperage is so variable that it has not been mentioned because of its uncertainty, but the higher it is, the greater the effect in general.

Site, type and area of contact is less important, pursuant to the physical law that electricity takes the shortest route between two electrodes, and this has led to investigation to determine the resistance of various bodily elements to the transmission of electrical energy. It has been found that the tissues transmit proportionate to the amount of their fluid constituents; the more saline this is, the better the conductivity. Blood is the best conductor, mainly because of the saline serum. Muscle comes next, nerve tissue follows, and bone is a poor conductor. Similarly, experiments have shown that the bodily tissues exert varying resistance to the passage of electricity, as denoted by the unit of resistance, the ohm. The average human resistance is 1,000 ohms. Dry skin is very resistant, and one observer (Jolly) says that this is 150 times greater than that of the underlying tissues. A dry, hard, thick skin offers more resistance than one that is moist, soft or thin; an acid or alkaline perspiration reduces the resistance, while an oily skin raises the resisting power. If a strong alkali be applied to the skin so that the oily secretions are removed, the resistance is much lowered, so that the subject experiencing little effect from 100 volts might be disturbed by 10 volts. Larrat[3] says that if muscle is given a standard resistance of 1, then nerve and cartilage can be denoted by 2.5; bone as 15 to 20; and the skin and epidermis as between 100 and 500. Electric energy meets greater resistance passing transversely to the axis of a tissue than when transmitted longitudinally, this being 6:1 in muscle, 3:1 in nerve fibers. Turner's experiments indicate that transmission from hand to hand meets with a resistance of 1,375 ohms; through one hand 900 ohms; from cheek to cheek 600 ohms; from one supramalleolar region to another 700 ohms; and through the calf of leg 350 ohms.

As compared with any metal, the body is a poor conductor, it being calculated that muscle is 115 million times a poorer conductor than copper. It has also been estimated that one inch of the sciatic nerve has eight times the resistance of the Atlantic cable.[4]

The greater the area of contact, the greater the effect, especially if the current traverses vital parts, notably if the heart is in circuit.

The individual variation means the personal equation, and it is strikingly similar to that of drug idiosyncrasy, notably as to sex, age, physique, occupation and temperament. Males are less affected than females; the aged offer less resistance than the young on account of the constituents of the blood vessels; those of rugged and muscular physique have a greater conductivity than those of the opposite type; the phlegmatic are subjectively less prone than the neurotic; those accustomed to electric energy are often less influenced than the novice. Illness, sleep and alcholism render persons less sensitive.[5]

Variations as to time of day, type of clothing, amount of food in the stomach and general well being, all seem to exert some influence; but the given effect cannot always be determined by these factors, and I have known electric workers to have practically no effects from contact under circumstances that left no doubt as to high voltage traversing the system.

PHYSICAL EFFECTS

In a general way these are three in number:

1. Death.
2. Burns.
3. Nervous symptoms.

Death.—Death from electricity is usually sudden, and is best represented by the execution of criminals, lightning stroke and unexpected contact with highly charged materials, the body completing and short-circuiting two conductors. Under such circumstances there may or may not be decided external evidence of what has occurred, any such taking the form of burns of varying degree, areas of lividity or ecchymosis, or simple crimsoning to mark the place of entrance or exit of the current. It is, however, very unusual for a lethal dose of electricity to fail to leave some visible evidence at the points of contact. Postmortem, such cases are surprisingly free from gross microscopic changes, and the most careful search of all the tissues has as yet failed to give any adequately uniform cause of death. The findings in general are not unlike those following drowning or suffocation. The body of Czolgos, assassin of President McKinley, was subjected to the most minute scrutiny, especially by Spitka's examination of the brain and cord, but nothing more than the customary fluidity and venous stasis of the blood with flaccidity of the heart muscle was found. In a still more recent autopsy of an electrocuted murderer the same negative findings were recorded. Observers appear to have two main theories to account for death under such circumstances; one being that the heart muscle is paralyzed by a tetanic spasm analagous to that observable in skeletal muscle under high voltage; and the other theory, that there is a definite cellular destruction, especially of the vital centers. In connection with this last, it has occurred to me that the disintegration that seemingly takes place may generate toxic materials, thus adding a chemical to a mechanical irritation that almost immediately kills. Death from low tension current is by heart fibrillation; heart and respiration alike fail from lethal medium tensions; and respiratory failure is the cause of death in high tension accidents.[6]

Burns.—Burns by electricity differ from those due to extremes of temperature only in origin, and they may be of the usual first, second and third degrees. An electric burn is an index of resistance of the tissue affected, and always indicates that the full strength of current has not been received. The character of the burn is sometimes determined by the type of metal acting as a conductor, and burns by arcs and flashes from copper conductors sometimes produce less severe burns than

3. Electrothérapie: Quoted by Dawson Turner, Manual of Practical Medical Electricity, p. 188.
4. Beard and Rockwell, p. 168.
5. Aspinwall, F. B.: Lancet, 1902, p. 660.
6. Minot, L.: Des accidents causés par l'emploi industriel de l'électricité, etc., Paris, 1908, p. 21, quoting Prévost and Batelli.

those emanating from iron or steel. By contrast with burns due to flame, or contact with steam, hot solids or liquids, deep electric burns are apparently less painful, produce less systemic shock, and heal more quickly. This was vividly impressed on me in a recent Harlem hospital service, where in adjacent beds lay patients who sustained irregularly distributed burns of all degrees in an incendiary fire, and also those who had received "third rail" burns; the former had more systemic symptoms, the burns were more intractable to treatment, and the complaints of pain were greater than in the latter class of cases. This is probably due to the fact that electric destruction of tissue is sudden and absolute, as if done by electric cautery. The contrast is even greater by comparison with burns from hot liquids, such as boiling water, oil or tar, and this irrespective of the surface areas involved. The resultant scarring and contraction appear about equal, even though electric burns are often more diffusely distributed over widely separated areas than burns of other kinds. If the clothing is ignited, there is added the element of heat burns to those which may be the direct result of electric contact. Examples of "third rail" burns are shown in the annexed illustrations (Figs. 1 and 2).

Burns resulting from partial or arcing contact often heal slowly and show a tendency to slough or to become gangrenous, especially if the trophic supply be involved. Cases of this type sometimes give external signs disproportionate to the underlying damage, and the severer symptoms may be a few days in appearing, and then show as isolated or confluent areas of a more or less gangrenous type. From the time of receipt of burns of this kind to the outbreak of severer manifestations, the interval period is always filled by symptoms indicative of more or less deep seated damage, in addition to the superficial evidences.

REPORT OF CASES.

As chief surgeon of the Metropolitan and Interborough Railways I have had many opportunities to examine cases of electric injuries, and one of the worst of these was the following:

CASE 1.—*History.*—S., a laborer, was working in a manhole repairing the "channel rail" of one of the surface roads, the current of 550 volts being turned on. In some manner he fell against this charged rail so that his back contacted at about the lower scapular level, his feet being grounded on concrete.

Examination.—He remained in that position several minutes and when released was found to have a third degree burn that practically escharred his back from mid-scapular to the lower lumbar region, and it is said that the burn reached far enough to expose the underlying viscera. He suffered profoundly from shock and was unconscious, and his recovery was protracted. Even at this date (6 years later) there is an unhealed area about 3 by 4 inches in the central portion of the scar, but all except this space cicatrized without skin grafting in a remarkable way considering the original extent and severity of the wound.

Subsequent History.—Some years later he was seen and exhibited by me, and at that time he had a butterfly-shaped scar 13½ by 11 inches in the involved area, in the lower portion of which was a supposed lumbar hernia. The scar had contracted enough at first to almost draw the wings of his scapulæ together and spinal flexion was impossible; but by continued self-bending and manipulation of his back, he so far recovered as to be able to resume manual labor. Later he was operated on by me and the supposed lumbar hernia proved to be retracted bundles of muscle fiber. The above mentioned unhealed areas were covered by autogenous Thiersch grafts, but healing was not yet complete in January, 1910. He at no time developed a traumatic neurosis (Fig. 3).

CASE 2.—*History.*—Another severe case was that of D. H., aged 23, ironworker, born in Finland. He was working on an iron trestle repairing overhead wires of a suburban electric and steam railroad, and, while assuming an upright position, his left occipital and clavicular regions contacted with a wire bearing 11,000 volts, and he became temporarily unconscious. Through the courtesy of Dr. F. B. Littlewood he was seen with this physician ten days later at the New Rochelle Hospital, and at that time he was able to be out of bed for a portion of each day.

Examination.—He then presented numerous sloughing and granulating burns of the left upper extremity and chest, and an extensive third degree burn of the left occiput and of the soles of the feet. He had little if any systemic shock or sepsis. There was no nervous involvement organically or functionally. Mentally he was as apt as could be expected, considering the fact that about one-sixth of his body was more or less badly burned.

The duration of contact in this case could not be ascertained, but it must have been short and imperfect, as it is to be noted that the contact was on the head and the left upper extremity, and that he was grounded by his feet standing on a metal support so that the main part of his body was temporarily a part of the circuit. He wore no hat, and his shoulders were bared except for a thin shirt, and he had no tools in his hands. Theoretically this man should have been unable to withstand electric shock of that volume, but the burns evidenced the fact that only a portion of the voltage was received. I am told by Dr. Littlewood that he made an excellent recovery, and that his progress and subsequent symptoms were those typical of severe burns.

CASE 3.—*History.*—I am also indebted to Dr. Littlewood for notes of the case of J. M., who was working on the same railroad and who came in contact with a transformer so that his left shoulder apparently received 11,000 volts.

Examination.—He immediately became unconscious, and when seen at the New Rochelle Hospital by Dr. Littlewood, had severe burns of the entire left half of the body, and the sole of each foot showed two large blebs about the circumference of a dollar. His temperature ranged from 98 to 99.4, pulse 99 to 120, respirations 20 to 40. The next night he began to vomit, and developed an uncontrollable singultus. The vomitus became biliary, and assumed the type seen in gastroduodenitis following severe burns of this or other origin.

He died early on the fourth day apparently from systemic shock. In this case the manner and duration of contact was problematical, but it is stated that the contact was for an appreciable time and that he was probably grounded on metal judging from the blebs of the feet. It is to be noted that the respiratory rhythm was more disturbed than that of the heart, and that his temperature was at no time more than one-half degree below normal. Death in this instance was probably due to respiratory failure accompanied by paralysis of the diaphragm. No autopsy was permitted. The cause of the gastroduodenal symptoms in any class of severe burns has never been satisfactorily explained, and it is generally a bad feature.

NERVOUS SYMPTOMS

In the absence of direct destructive or inflammatory damage to nerve fiber and the subsequent development of a more or less localized neuritis, the nervous effects are almost invariably those of the hystero-neurasthenic type, it being rare in my experience to find either neurosis separately as a consequence of electric or any other form of trauma. I have never known an organic disease of the central nervous system to develop from the passage of electricity through the body, nor does the available literature narrate more than one instance of this nature. If a direct injury has been done to nerve fiber, the symptoms will be those corresponding to the distribution of the affected nerves, and hence no description is needed.

Where direct injury to nerve tissue is absent or minor in extent, the subsequent development of neurasthenic and hysterical symptoms is generally psychic in origin

or dependent on auto- or hetero-suggestion, and the signs then presented are usually disproportionate to the actual physical damage sustained. Such cases rarely present objective evidences of electric contact and occur usually in those predisposed because of a neurotic or actually hysterical temperament. The flash or spark or arc from charged metallic contacted points occasionally induces this set of nervous symptoms, either with or without bodily contact. Cases of this and allied sorts are often designated by the term "electric shock," and less frequently as "electric neurosis;" but the symptoms do not differ in any essential respect from the ordinary shock or neurosis attributed to any other trauma.

Examination of such a patient develops a wealth of subjective symptoms and a poverty of objective symptoms, and the average case will correspond to the following:

CASE 4.—*History.*—Mrs. F. was alighting, during a rain, from a suburban electric car operated by the overhead trolley system. While she had one foot on the car platform and the other on the metal step, her hand being on the dash handle, she claims to have received a "shock," the force of which threw her face downward to the ground. She was stunned but not unconscious, did not vomit, and when assisted to the adjacent sidewalk was able to discuss the occurrence with some show of agitation and not a little anger. She walked unaided to her home near by and saw her doctor some few hours later. He gave her lotions for the bruises of the knee, elbow and hands. There were no burns or obvious electric effects, but she did complain of tingling and needle sensations in the hand that touched the dash-handle and in the foot that contacted with the metal step.

Examination.—When I saw her some fourteen days after the accident she was abed, somewhat pallid, and had a characteristically tense and drawn expression, and was markedly irritable in manner and speech, all of the foregoing being said to be foreign to her normal state. There was an obvious rapid tremor of the closed eyelids, about the angles of the mouth, and of the outstretched fingers and protruded tongue. External evidences of injury were lacking aside from a fading area of bluish discoloration over a palm-sized area just above the right knee, probably from her fall. No evidences of electric contact, or of so called "electric shock" were apparent. No paralyses and no areas of diminished sensation; conjunctival and pharyngeal reflexes absent; marked demographia; knee-jerks lively, all others normal. Romberg sign marked; no Babinski, or allied manifestations. Gait was normal and pulse rapid. There were areas of shifting tenderness along the spine, these being very inconstant and readily brought out by suggestion. Two spots were found in the upper dorsal region consistently tender, but she leaned back in a chair on these same areas and made no complaint. There was no contraction of visual fields, and no color distortion. Here is a typical case of the milder form of recoverable hystero-neurasthenia, and she had many symptoms that might as well be stigmatic as symptomatic. She recovered perfectly in a short time.

Contrasted with the former mixed type of functional nervous disturbance, the following case of almost typical hysterical motor paralysis with milder neurasthenic symptoms is narrated:

CASE 5.—*History.*—G., an electrician, was admitted to the Harlem Hospital in Dr. H. A. Haubold's service with a history of having been injured two weeks ago in an out-of-town power house, the patient stating that while holding a dead wire in his left hand, someone turned on the current of 110 volts and his hands and fingers were burned; immediately fingers of the left hand contracted; it felt as if an electric current passed through him every time his fingers were touched; he claims to have lost all sensation over entire left upper extremity; and says that he cannot move his fingers; he has had other electric burns, but was never affected in this manner before; the current entered the palm of the left hand, but the place of exit is unknown.

Examination.—On examination the left hand presented the pseudo-Dupuytren's contraction appearance indicated in the annexed photograph (Fig. 4), palmar flexion at the metacarpophalangeal joints of the inner four fingers being marked, that of the ring and little finger being most prominent. There was no apparent atrophy, nor was there any burn or other sign of trauma. He would not permit the slightest manipulation of the extremity except when his attention was diverted, and then the fingers could be partly extended. He claimed loss of thermal and tactile sensation over variable areas from the elbow down; but these shifted, especially on suggestion, and followed indefinite nerve distribution. Active motion of the wrist was limited; that of the elbow and shoulder normal. He would not permit passive motion, nor would he consent to electric tests. The examination as to his general state showed him to be in excellent condition except that he was of neurotic type and presented many hysterical stigmata and neurasthenic manifestations.

During the fortnight intervening between the accident and his entry to the hospital, he was under the care of a physician, who had given him some internal medication with local application of iodin, and who is said to have made a diagnosis of "paralysis from electric shock." At no time were splints or retentive forms of apparatus employed. He would not consent to the proposed anesthetization, nor would he allow a dorsal splint to be applied, and accordingly he was dismissed from the hospital with a diagnosis of "hysterical paralysis of hand." There was unquestionably an element of voluntary exaggeration in this instance as so often happens in that class of case in which litigation is pending. When seen a month later he had regained function enough to do his usual work but still had many subjective complaints.

Occasionally there are recorded cases in which blindness and deafness and other special sense defects have been attributed to electric contact or flashes, but all instances of this sort are of the hysterical variety, and fall into the class of so-called "fright neuroses." An example of this sort came to my notice recently in which "blindness" was said to have been induced in a susceptible woman by the flash and spark display when an overhead trolley wire was struck by a metal beam. She was seated in her room some two hundred feet away from the scene of this brilliant display of light and sparks but within sight and sound of the occurrence, and she claimed that she experienced the sensation of a ball of fire dancing before her eyes, and she immediately became sightless. Examination showed no organic defect of vision; the case was one of hysterical amaurosis induced by fright in a susceptible person. Vision returned within a short time.

OTHER EFFECTS

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TREATMENT

Treatment presents no special problems, inasmuch as it is for the relief of shock, burns or neuroses. In cases of profound injury, and even where death has apparently occurred, prolonged artificial respiration should be maintained, as in drowning cases, with compression of the

7. Crile, G. W.: Article on Surgical Physiology, Keen's Surg., i, 79 *et seq.*; Crile and Dolley: Jour. Exper. Med., 1906, viii.

chest-wall in the precordial region; even digital compression of the heart itself has been proposed, but never successfully practiced. Crile recommends rhythmic pressure over the heart area, the tongue being drawn out, as he says that this combines circulatory and respiratory artificial stimulation.

Fig. 1.—Example of third-rail burn.

Fig. 3.—Third degree electric burn extending from mid-scapular to lower lumbar region.

With the foregoing manual methods, the use of various stimulants of the atropin, strychnin and adrenalin sort is also advisable.

Burns are treated in accordance with the custom of the individual physician, and it has been observed that the so-called open method of treatment is especially efficacious in this type of burn.

Neuroses are best treated by isolation, plus the mental or therapeutic means best liked by the individual practitioner.

PROGNOSIS

Prognosis depends on the extent of initial inhibition symptoms; in patients that survive forty-eight hours, the

Fig. 2.—Example of third-rail burn.

prognosis is that of the absorption of septic and toxic products from the burned areas, with the development of cardiac, respiratory or kidney complications, and with, occasionally, the presence of fatal gastro-intestinal disturbances.

The ultimate scarring and contraction from the burns requires no comment. Neuroses do not ordinarily develop until after the patient has recovered from the main objective symptoms, and these nervous manifestations then frequently stand in relationship to a pending claim, and recovery does not usually ensue until adjustment is effected.

Fig. 4.—Pseudo-Dupuytren's contraction as the result of electric burn, showing marked palmar flexion at the metacarpo-phalangeal joints of the inner four fingers.

CONCLUSIONS

It can be stated that there is no special form of physical effect inherent to electricity inasmuch as every symptom can be paralleled by other forms of trauma. Likewise there is nothing pathognomonic in electric shock and the symptoms of it are those common to other forms

or dependent on auto- or hetero-suggestion, and the signs then presented are usually disproportionate to the actual physical damage sustained. Such cases rarely present objective evidences of electric contact and occur usually in those predisposed because of a neurotic or actually hysterical temperament. The flash or spark or arc from charged metallic contacted points occasionally induces this set of nervous symptoms, either with or without bodily contact. Cases of this and allied sorts are often designated by the term "electric shock," and less frequently as "electric neurosis;" but the symptoms do not differ in any essential respect from the ordinary shock or neurosis attributed to any other trauma.

Examination of such a patient develops a wealth of subjective symptoms and a poverty of objective symptoms, and the average case will correspond to the following:

CASE 4.—*History.*—Mrs. F. was alighting, during a rain, from a suburban electric car operated by the overhead trolley system. While she had one foot on the car platform and the other on the metal step, her hand being on the dash handle, she claims to have received a "shock," the force of which threw her face downward to the ground. She was stunned but not unconscious, did not vomit, and when assisted to the adjacent sidewalk was able to discuss the occurrence with some show of agitation and not a little anger. She walked unaided to her home near by and saw her doctor some few hours later. He gave her lotions for the bruises of the knee, elbow and hands. There were no burns or obvious electric effects, but she did complain of tingling and needle sensations in the hand that touched the dash-handle and in the foot that contacted with the metal step.

Examination.—When I saw her some fourteen days after the accident she was abed, somewhat pallid, and had a characteristically tense and drawn expression, and was markedly irritable in manner and speech, all of the foregoing being said to be foreign to her normal state. There was an obvious rapid tremor of the closed eyelids, about the angles of the mouth, and of the outstretched fingers and protruded tongue. External evidences of injury were lacking aside from a fading area of bluish discoloration over a palm-sized area just above the right knee, probably from her fall. No evidences of electric contact, or of so called "electric shock" were apparent. No paralyses and no areas of diminished sensation; conjunctival and pharyngeal reflexes absent; marked demographia; knee-jerks lively, all others normal. Romberg sign marked; no Babinski, or allied manifestations. Gait was normal and pulse rapid. There were areas of shifting tenderness along the spine, these being very inconstant and readily brought out by suggestion. Two spots were found in the upper dorsal region consistently tender, but she leaned back in a chair on these same areas and made no complaint. There was no contraction of visual fields, and no color distortion. Here is a typical case of the milder form of recoverable hystero-neurasthenia, and she had many symptoms that might as well be stigmatic as symptomatic. She recovered perfectly in a short time.

Contrasted with the former mixed type of functional nervous disturbance, the following case of almost typical hysterical motor paralysis with milder neurasthenic symptoms is narrated:

CASE 5.—*History.*—G., an electrician, was admitted to the Harlem Hospital in Dr. H. A. Haubold's service with a history of having been injured two weeks ago in an out-of-town power house, the patient stating that while holding a dead wire in his left hand, someone turned on the current of 110 volts and his hands and fingers were burned; immediately fingers of the left hand contracted; it felt as if an electric current passed through him every time his fingers were touched; he claims to have lost all sensation over entire left upper extremity; and says that he cannot move his fingers; he has had other electric burns, but was never affected in this manner before; the current entered the palm of the left hand, but the place of exit is unknown.

Examination.—On examination the left hand presented the pseudo-Dupuytren's contraction appearance indicated in the annexed photograph (Fig. 4), palmar flexion at the metacarpophalangeal joints of the inner four fingers being marked, that of the ring and little finger being most prominent. There was no apparent atrophy, nor was there any burn or other sign of trauma. He would not permit the slightest manipulation of the extremity except when his attention was diverted, and then the fingers could be partly extended. He claimed loss of thermal and tactile sensation over variable areas from the elbow down; but these shifted, especially on suggestion, and followed indefinite nerve distribution. Active motion of the wrist was limited; that of the elbow and shoulder normal. He would not permit passive motion, nor would he consent to electric tests. The examination as to his general state showed him to be in excellent condition except that he was of neurotic type and presented many hysterical stigmata and neurasthenic manifestations.

During the fortnight intervening between the accident and his entry to the hospital, he was under the care of a physician, who had given him some internal medication with local application of iodin, and who is said to have made a diagnosis of "paralysis from electric shock." At no time were splints or retentive forms of apparatus employed. He would not consent to the proposed anesthetization, nor would he allow a dorsal splint to be applied, and accordingly he was dismissed from the hospital with a diagnosis of "hysterical paralysis of hand." There was unquestionably an element of voluntary exaggeration in this instance as so often happens in that class of case in which litigation is pending. When seen a month later he had regained function enough to do his usual work but still had many subjective complaints.

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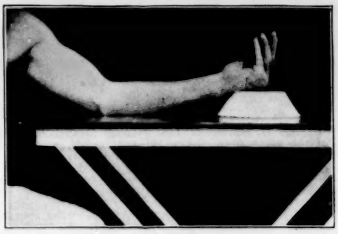


Fig. 4.—Pseudo-Dupuytren's contraction as the result of electric burn, showing marked palmar flexion at the metacarpo-phalangeal joints of the inner four fingers.

CONCLUSIONS

It can be stated that there is no special form of physical effect inherent to electricity inasmuch as every symptom can be paralleled by other forms of trauma. Likewise there is nothing pathognomonic in electric shock and the symptoms of it are those common to other forms

of systemic shock, with or without burns or neuroses. The duration of symptoms is no more prolonged after electric than other forms of trauma; nor does there appear to be any sound basis for the claim that one electric shock renders the recipient more prone to similar experiences, but on the contrary an acquired immunity seems to be created by repeated applications. Electricity is well understood scientifically and is governed by well-known physical laws, and there is no good reason for the view often expressed that its effects on the human economy are unusual or peculiar.

101 Manhattan Avenue.

THE SURGERY OF THE HYPOPHYSIS FROM THE STANDPOINT OF THE RHINOLOGIST

J. MONTGOMERY WEST, M.D.
Assistant Laryngologist, Johns Hopkins Hospital
BALTIMORE

Heretofore rhinologists have been interested in the hypophysis only in a general way. Like others, they have been watching intently the results of the researches which are gradually unraveling the mystery enveloping the physiology of this gland, but up to the present time they have given but scant attention to the surgery of this structure. The explanation of the apparent lack of interest in the surgery of this region is to be sought in

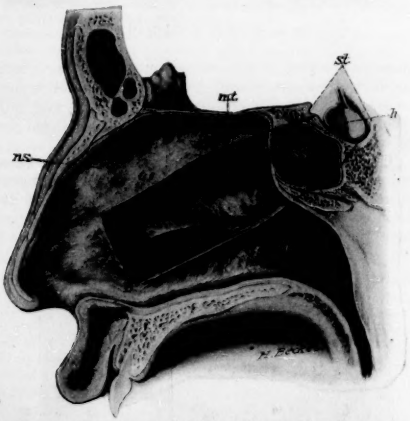


Fig. 1.—ABCD represents the window formed by resecting a quadrilateral piece from the nasal septum, N. S.; through this window the insertion of the removed middle turbinate is seen at M. T.; I. T., the remaining part of the inferior turbinate. AC and BD, continued by dotted lines, show the direction of approach through the sphenoid sinus, S. S., to the sella turcia S. T. containing the hypophysis, H. For the sake of clearness the anterior wall CD of the sphenoid sinus is shown, although in the operation it is removed before the nasal septum is attacked.

the fact that cases requiring operations on the pituitary body are never seen by rhinologists, and hence the nasal surgeon has never considered the hypophysis, although practically an extracranial structure, as being within the field of nasal surgery. Once the rhinologist's attention is directed to this region, however, he sees that he is in a position to help solve the problems of the surgery of this organ. The removal of the anterior wall of the sphenoid sinus through the nostril involves a technic with which the rhinologist has for years been entirely familiar. The anterior wall being removed, he has but to lengthen and to modify his instruments and he is in a position to attack the superior wall[1] separating the sinus from the sella turcica containing the pituitary body (Fig. 1).

My interest was first awakened in this subject in February, 1909, through a case shown by Cushing before the Johns Hopkins Hospital Medical Society. In this case Cushing had successfully operated on the hypophysis by the supranasal method, that is through the superior part of the nose following a course parallel to the cribriform plate.

The methods of approach to the hypophysis, which had up to that time been suggested, were many, some more or less similar, and several were of a very mutilating character. Without attempting to describe in detail the difference between the various procedures, it may be noted that the methods may be classified according to Schloffer[2] as (1) *intracranial* and (2) *extracranial*.

1. Of the intracranial methods, aside from minor modifications, two entirely different procedures have been suggested:

A. The approach through the temporal region of the skull, lifting the temporosphenoidal lobe and thus reaching the hypophysis. This method, first suggested by Caton and Paul,[3] has been followed by Horsley[4] and McArthur.

B. The approach through the frontal bone, avoiding the frontal sinuses, lifting the frontal lobe and following the anterior fossa (Kiliani,[5] Krause[6]).

2. The extracranial methods are those by which the sella turcica is approached through the sphenoid sinuses, as, for example, by removal of the palate, and the interior of the nose (König[7]); or, as suggested by Kocher,[8] the superior maxilla is chiseled through above the alveolar process, and after incision of the soft parts a *Wangennasenlappen* is turned down and out; or after the nasal walls of the maxillary sinuses have been removed, through the fossa canina, Löwe[9] suggests making a skin incision along the nose which permits of a radical opening up of all the nasal sinuses by an anterior approach. Schloffer[10] in one case has turned the nose to one side, and, following a course parallel to the cribriform plate, after removing the turbinates and the nasal wall of the orbit, has succeeded in removing a tumor from the sella turcica. This method of Schloffer has been followed by Eiselsberg[11] in five cases and a similar operation has been done once in this country by Cushing.

It will be noticed that all of these operations are more or less extensive and necessitate great destruction of tissue.

Schüller[12] and Erdheim have pointed out the great value of the *x*-ray in aiding us to judge of the size of an hypophyseal tumor, and Schloffer's pathologic studies lead him to the conclusion that, so long as the cranial entrance to the sella turcica is enlarged to a diameter not

1. In speaking of the part of the wall of the sphenoid sinus which separates the sinus from the sella turcica, as the superior wall, we follow the description of Zuckerkandl (Anatomie der Nasenhöhle, Edition 2, Vienna, 1893, i, 335).
2. Schloffer: Beitr. z. klin. Chir., 1906, i, 767.
3. Caton and Paul: Brit. Med. Jour., 1893, p. 1421.
4. Horsley: Brit. Med. Jour., 1906, ii, 44.
5. Killani: Ann. Surg., 1904, No. 40, p. 35.
6. Krause: Die deutsche Klinik am Eingange des 20 Jahrhunderts, 1905, viii, 1004.
7. König: Berl. klin. Wchnschr., 1900, No. 46, p. 1040.
8. Kocher: Operationslehre, 1902, Edition 4, p. 133.
9. Löwe: Zur Chirurgie der Nase, Berlin, 1905.
10. Schloffer: Wien. klin. Wchnschr., 1907, No. 21, p. 621.
11. Eiselsberg: Wien. klin. Wchnschr., 1909, No. 8, p. 287.
12. Schüller: Die Schädelbasis im Röntgenbilde, Fortschr. a. d. Geb. d. Röntgenstr., Ergänzungsband 11.

greater than 2 cm., the tumor is operable by the transphenoidal route. Moreover, owing to the proximity of the carotids and the cavernous sinuses, the window which is resected from the sella turcica must necessarily be of small size, and hence all solid tumors operable by this route will be small. Large tumors of the pituitary region will probably all be inoperable.

Considering, then, the fact that perhaps all operable tumors of this region will be small, it occurred to me that a conservative surgical method following a transnasal route diagonally through the nose roughly parallel to Zuckerkandl's line from the nostril to the sphenoid sinus ought to accomplish the same result as the more radical procedures. The following facts support this conclusion:

1. Adrenalin, owing to its constricting effect on the cavernous tissue of the nose, renders the nasal passages so patent that, in most cases, the anterior walls of the sphenoid sinuses can be clearly seen over a considerable area by inspection through the nostril. This being the case it would seem rational to follow this open route from the nostril through the sphenoid cavity, and by thus utilizing the space offered by the natural passages through the nose one is enabled to open the sella turcica with the *least possible destruction of tissue.*

2. Without entering into the question of the physiology of the hypophysis, it will suffice to say that the researches of Howell[13] and of Schäffer[14] have shown that this organ has a definite physiologic function, and, while the experiments of Friedman and Maass[15] have apparently shown that in cats the pituitary body can, without injury to the animal, be removed, on the other hand, Paulesco[16] and also Cushing[17] have demonstrated that in dogs part at least of the anterior lobe is necessary to the life of the animal. The results of animal experiments cannot always be applied unchanged to human beings, and, besides, the complete extirpation of the hypophysis has apparently in man been accomplished in several cases without a fatal result. With the evidence at hand, however, the question of partial removal comes up at once. A glance at Figure 1 will show that this infranasal route, anatomically considered, would seem to be advantageous particularly for partial removal, for in this case the hypophysis is approached from below, making it easier to remove the posterior lobe than if the supranasal route parallel to the cribriform plate be followed.

3. The nasal surgeon, as mentioned above, had already developed the technic of this operation to the point of opening up the sphenoid sinuses, and it would seem but an easy and natural step to cross the sphenoid cavity and attack the sella turcica.

4. While in conditions demanding operation on the hypophysis the question of the cosmetic result is of minor importance, still, other things being equal, the procedure causing the least disfigurement should be the method of choice. In some of Eiselsberg's cases healing was accompanied by marked deformity. This infranasal method should be followed by no deformity at all.

With these facts clearly in mind I began on fresh cadavers to develop a technical method for this operation, which up to that time had not been suggested. In one of my early experiments, after resection of the middle turbinate, part of the inferior turbinate and the anterior wall of the sphenoid sinus of one nasal cavity alone, it was possible to remove the pituitary gland through the nostril without cutting the ala and with the nasal septum intact. This case represents, of course, unusually favorable conditions, and in my other experiments it was always necessary to remove part of the nasal septum, including the septum sphenoidale. Later as routine I began removing both middle turbinates, for this shortens the operation considerably. I followed in each case the general course here described, that is, in the direction of Zuckerkandl's line through the sphenoid

Fig. 2.—Chisel with knobs at either corner of the cutting edge used in removing the quadrilateral piece from the nasal septum. These knobs straddle the septum and prevent the chisel from slipping into the nasal cavity.

sinus to the sella turcica. As each new difficulty arose I have tried to devise instruments to overcome it. Meanwhile Kanavel[18] of Chicago published an article describing a method of approach similar to that which I had been following. He is more radical, however, and advocates elevating the nose. I have developed the technic further than Kanavel has done, and am describing the procedure as I have developed it.

In the first place I suggest with Moskowicz[19] that the operation be done in two stages. I believe, however, the turbinates of both nasal cavities, the anterior wall of the sphenoid sinuses, part of the nasal septum, including the septum sphenoidale, can in most cases be removed at a preliminary operation with *local anesthesia* (cocain, adrenalin) without slitting the ala nasi at all. It will probably be a question entirely of the patient's tolerance for cocain and adrenalin; and it is suggested that in the cocainization particular attention be given to the regions

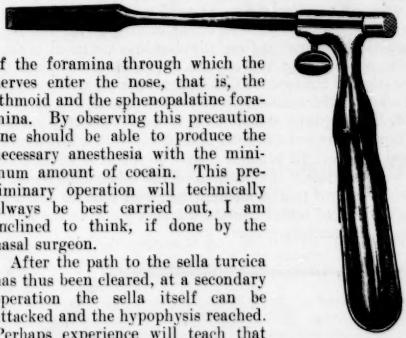


Fig. 3. — Long chisel used in opening up sella turcica.

of the foramina through which the nerves enter the nose, that is, the ethmoid and the sphenopalatine foramina. By observing this precaution one should be able to produce the necessary anesthesia with the minimum amount of cocain. This preliminary operation will technically always be best carried out, I am inclined to think, if done by the nasal surgeon.

After the path to the sella turcica has thus been cleared, at a secondary operation the sella itself can be attacked and the hypophysis reached. Perhaps experience will teach that the second stage of the operation can also be done under local anesthesia with cocain. Indeed, it may be shown in practice that it is possible, in some cases at least, to do the complete operation, that is both stages, as here suggested, with local anesthesia at a single sitting. For the second stage I recommend slitting the ala, although I have not found it necessary in any of my experiments on cadavers. Whether this second stage of

13. Howell: Jour. Expér. Med., 1898, iii, 245.
14. Schäffer and Vincent: Jour. Physiol., 1899, xxv, 87; Schäffer and Herring: Philos. Tr. Roy. Soc., London, 1906, 199, B 1.
15. Friedmann and Maass: Berl. klin. Wchnschr., 1909, No. 52; Friedmann: Berl. klin. Wchnschr., 1902, No. 19, p. 436.
16. Paulesco: Compt. rend. d. acad. Sc., 1907, cxliv, 521.
17. Cushing, H.: Some Principles of Cerebral Surgery, THE JOURNAL A. M. A., Jan. 16, 1909, lii, 184.
18. Kanavel, A. B.: The Removal of Tumors of the Pituitary Body by an Infranasal Route, THE JOURNAL A. M. A., Nov. 20, 1909, liii, 1704.
19. Moskowicz: Wien. klin. Wchnschr., 1907, p. 792.

the operation should come within the field of the nasal or the brain surgeon remains for the future to decide.

The technic in detail is the following:

1. The middle and as much as is necessary of the inferior turbinate of one nasal cavity are removed to permit a clear view of the anterior wall of the sphenoid sinus. The anterior wall of the sinus is then removed. The instruments used are familiar to all nasal surgeons and need no special description.

2. This procedure is repeated in the opposite nasal cavity, reserving the septum to be attacked later. The partial resection of the nasal septum is postponed until after the removal of the turbinates of both nasal cavities, on account of the hemorrhage often met during operations on the vomer.

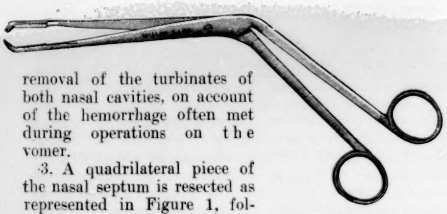


Fig. 4.—A long forceps with teeth set at an angle, used in removing pieces of bone from the sella turcica.

3. A quadrilateral piece of the nasal septum is resected as represented in Figure 1, following roughly Zuckerkandl's line in the direction of the rostrum sphenoidale. After this the septum sphenoidale is removed.

In attacking the nasal septum it is advantageous to begin by making an incision with a knife along the line A B (Fig. 1), then with a chisel (Fig. 2) cut, following the line A C to the sphenoid. Continuing with the chisel make a similar cut along the line B D, parallel to A C. This quadrilateral section of the septum is now removed in one piece, using for this purpose the Jansen forceps designed for the submucous resection of the nasal septum. The chisel (Fig. 2) used on the nasal septum is provided with knobs at either corner of the cutting edge which prevent it from slipping into the nasal cavity as it glides along the septum. (In cases of marked deviation of the septum this structure is then, of course, attacked as the second step of the operation.)

4. The septum sphenoidale is now removed partly with a long chisel (Fig. 3) and partly with a Grünwald nasal forceps. In practice it may be found to be helpful to note accurately the position of the sphenoidal septum with reference to the median line, and then to leave a slight ridge of septal bone to act as a guide to the mid-line at the secondary operation.

Fig. 5.—An extra long sound made of tempered steel which is often used to advantage.

5. The sella turcica is now opened up with the chisel (Fig. 3), the splinters of the bone being removed with the toothed forceps (Fig. 4). A long sound (Fig. 5) is often used to advantage.

In carrying out this fifth step, that is, the second stage of the operation as here proposed, the importance of keeping in the mid-line so as to avoid the optic nerves and the carotids cannot be too strongly emphasized.

It should be noted that Crowe's work showing the inhibitory effect of hexamethylenamin on infections of the meninges will make the rhinologist bolder in opening up the cranium from the nose.

To develop the technic for this operation, I have experimented on eleven cadavers. Owing, however, to the uncertainty of autopsy material and to the delays incident on devising and modifying instruments, the work (begun early in June, 1909) has extended over a period of six months.

For illumination of the field of operation I have used an ordinary gas-jet and a head-mirror such as belongs to the routine equipment of the nasal surgeon. A dilating speculum with an electric lamp attached at the distal end might be of assistance to surgeons who are not familiar with intranasal technic.

In suggesting that such an extensive intranasal operation be attempted under local anesthesia, one cannot but feel grateful to two men whose work has made possible, in the large majority of cases at least, both painless and bloodless nasal surgery. I refer to Koller, who first made use of cocain as an anesthetic, and to J. J. Abel, whose researches stimulated the work which culminated in the making of the adrenalin preparations as now used in practice.

Finally, I am much indebted to Dr. Whipple, of the pathological department of the Johns Hopkins Hospital, who kindly furnished the material for these experiments, and I desire also to express my appreciation of the assistance of Dr. Parsons and Dr. Brülle.

SUMMARY

In a word, this method is conservative and consists in approaching the sella turcica from below, following a course diagonally through the nose from the nostril to the sphenoid sinus, removing as much as is necessary of the turbinates, the entire anterior walls of the sphenoid sinuses, a quadrilateral piece from the nasal septum, including the septum sphenoidale, and finally attacking the sella. This procedure takes advantage of the natural space afforded by the nasal passages, and thus permits the sella turcica to be opened up with the *least possible destruction of tissue*. Further, I believe that the greater part of this operation can be done under *local anesthesia*.

227 West Monument Street.

A NEW APPARATUS FOR PROCTOCLYSIS

ANGUS McLEAN, M.D.
DETROIT

This apparatus consists of a galvanized iron or tin box (size 7 by 8 by 9 inches), the walls, floor and cover of which are made of two layers, between which is placed a sheet of asbestos to minimize heat radiation. For the front, two layers of glass instead of metal are used.

In this box are placed a two-quart dish (A), a funnel (B), a strip of gauze (C) and an incandescent bulb (D).

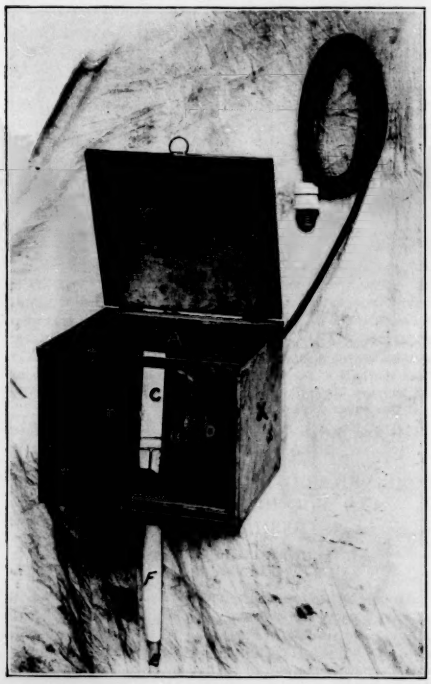
A. The two-quart dish is for the saline solution. The peculiar shape seen in the illustration is used to economize space. It is made as broad and as shallow as possible to insure a uniform drop.

B. The funnel receives the saline solution drop by drop and is connected with a tube (E) which leads to the patient's rectum. The tube leading to the rectum is enclosed in one (F) of larger caliber. This is attached to the floor of the box, but does not communicate with

its interior. The purpose of tube F is to prevent radiation of heat from the inner tube, thereby conserving the heat in the saline fluid during transit from the container to the rectum.

C. The gauze hangs over a spout on the dish, and by capillary attraction causes the saline solution to flow drop by drop into the funnel and thence into the rectum. It is so arranged that the distal end hangs about 2 inches below the lowest level of the dish. A strip is used 1 inch wide and of varying thickness, depending on the number of drops per minute required (four-ply giving 50 drops a minute).

D. An incandescent bulb (or, if electricity is not at hand, an alcohol lamp) is placed under the dish and as



A new apparatus for proctoclysis; A, dish for saline solution; B, funnel which receives the solution drop by drop; C, gauze hanging from spout of dish A, and conducting solution into funnel B; D, electric bulb; E, tube leading to rectum; F, larger tube enclosing tube E.

near as possible to the double glass front in order to prevent condensation of vapor. A sixteen-candle-power bulb is sufficient. This will keep the temperature of the saline solution at 140 to 145 F. indefinitely. This temperature I have found necessary to cause the solution to enter the rectum at a temperature of 100 to 101 F., for, in spite of the double tube and the drop falling through air heated to 140 F. the loss of heat from the dish to rectum, through a tube 4 to 5 feet long, is about 40 degrees. Were the smaller tube not enclosed by a tube of larger caliber the water would enter the rectum at about 96 F., and the slightest draught coming in contact with the single tube would bring the temperature of the fluid entering the rectum still lower (to 85 and 80 F.).

From this description it is evident that no part of the tube is constricted and that consequently there is always a free communication between the rectum and funnel. The drop is formed outside of this communication. Should feces, pressure of the thighs on the tube or anything else cause an obstruction to the flow into the rectum, the solution will at once be seen filling the funnel. Gas forming in the rectum, having absolutely nothing to obstruct its passage outward, will readily bubble up through the tube. The box itself is so arranged that the funnel will be from 8 to 12 inches above the level of the patient's rectum. In case the rate of absorption is slower than the rate at which the solution is dropping, the tube will naturally become filled with water. Even then, gas that may accumulate in the rectum, being much lighter than water, will easily bubble up through the tube. The amount of pressure necessary to bring about this result is that equal to 30 mm. of mercury, and pressure to that extent any patient can conveniently bear. Again, if the rate of absorption is slower than the rate at which the fluid is dropping into the funnel, say, 60 drops per minute, the fluid is running too fast for the individual. The rate of flow can then be diminished by simply using a strip of gauze with a lesser number of thicknesses. This will prevent the tube filling with water and consequently a pressure equal to 30 mm. of mercury, necessary to force gas through a column of water in the tube, will never exist. Gas will simply find its way through the patent, empty tube as soon as it is formed or, if it has been formed higher up in the colon, as soon as it reaches the rectum.

For the rectal end of the tube, the rectal tips advocated by Murphy are used.

This apparatus, therefore, furnishes a perfect drop which can easily be regulated to suit the needs of the patient. It allows for rapid expulsion of flatus. It is simple and very inexpensive (any tinsmith can make an outfit), and, if necessary, it can quickly be improvised in any household where a basin, a funnel, a tube and a piece of gauze are at hand.

57 West Fort Street.

A CASE OF HEMORRHAGIC PEMPHIGUS

CHARLES F. CLOWE, M.D.
SCHENECTADY, N. Y.

A case of pemphigus is rare enough to attract attention at any time, but a case of this degree of severity is so unusual as to merit reporting.

Patient.—J. McC., aged 29, driver of an ice wagon, a blonde, weighing 325 pounds, was admitted to my ward in the Ellis Hospital, Oct. 14, 1909, with the following history.

History.—His father died of tuberculosis at the age of 61. His mother, two sisters and a brother are alive and well. The patient had the usual diseases of childhood, pneumonia at 14, and gonorrhea at 22, of which latter he was "cured" in about six weeks. For the past two or three years he has had indefinite pains attributed to rheumatism. There is no evidence of syphilis. He is an excessive user of tobacco and at times drank heavily of both beer and whisky. For the past two years he has drank steadily, chiefly of beer. He suffers more or less from indigestion. His bowels move normally.

Present Illness.—Early in August, 1909, the patient noticed some blisters on the skin of the thighs and pubic region which itched somewhat. These dried and new ones came for the next three or four weeks, during which time he kept at work and

felt fairly well, although he visited a physician and applied local treatment. During the month of September the eruption steadily increased and his strength and appetite failed, until about October 1, when he was obliged to give up work.

Examination.—He is an extremely large man. His body is almost covered with a bullous eruption, the blebs varying in size from a pea to the area of a half dollar. The eruption is most profuse on the thighs, in the axillæ, over the abdomen and neck. No part is free except the palms of the hands and soles of the feet. The blisters are seated on a slightly reddened base and filled with a clear serum. Many of them are tinged with blood. The character of the eruption is well shown in the accompanying illustration. His tongue is coated, there is complete anorexia, bowels are regular. He is delirious during the night and at times during the day, is hard to manage and vile in his language. His pulse was always relatively high and of poor quality. Tobacco and alcohol were both stopped on admission. A blood count showed whites 7,200, reds 4,320,000. On examination the serum in the blisters was found sterile.

Hemorrhagic pemphigus.

Treatment and Course.—The blebs were punctured, the fluid expressed and a dressing of very soft oxid of zinc ointment applied. He was given 5 m. of Fowler's solution and ½ ounce of linseed oil three times daily. The patient steadily improved and in about two weeks the eruption had entirely disappeared with no loss of tissue, and only a bright red stain remained. During this time, however, he developed a marked paresis of the extensors of the arms and legs accompanied by no pain, but a general muscular soreness. This gradually has cleared up under the use of strychnin and electricity until at this writing (Dec. 15, 1909), he is in very good condition.

613 Union Street.

A NEW APPARATUS FOR THE ESTIMATION OF BLOOD-PRESSURE

DELNO E. KERCHER, M.D.
PHILADELPHIA

The apparatus for the estimation of blood-pressure which I desire to present has the following features to recommend it:

Extreme simplicity; the avoidance of all ground joints, cocks, valves and complicated mechanisms.

Absence of metal parts to amalgamate the mercury.

Ease of manipulation; only one hand being required to work the apparatus, the other being free to feel the pulse or manipulate the stethoscope in auscultation.

Cheapness; there being no expensive parts or construction, this apparatus can be sold for one-half the price of the cheapest instrument at present on the market.

Portability; it may be taken apart readily, carried in any convenient bag and quickly put together again for use. The entire apparatus weighs fourteen ounces.

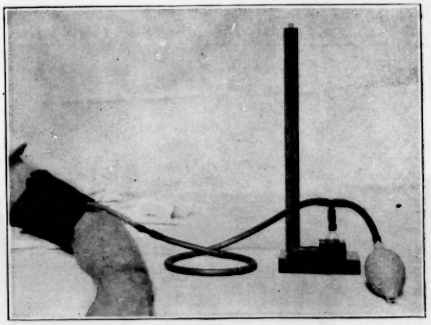
This apparatus consists of:

1. Wooden base with supports for small glass mercury cistern and for upright 300 mm. scale graduated in millimeters. Lying in a groove in this scale is the glass tube containing the mercury column which measures the pressure.

2. A strong cloth cuff 4 by 36 inches, containing the rubber pneumatic tube.

3. Three feet of strong rubber tubing bearing at one end a slip connection for attachment to the pneumatic cuff, at the other a rubber bulb with double valve for applying the air pressure to the apparatus, and in the tubing about six inches from the bulb a T connection to attach the cuff and bulb to the mercury cistern.

4. One ounce of pure mercury.



Apparatus for estimation of blood-pressure.

1534 Pine Street.

COMBINED MOUTH GAG AND TONGUE FIXER AND SUCTION APPARATUS FOR TONSIL OPERATION

EDWARD C. SEWALL, M.D.
SAN FRANCISCO

An efficient mouth gag and tongue depressor which I have been using for over six years is shown in the accompanying illustration (Fig. 1). It is modeled on the style of the old Hartman mouth gag, but involves an entirely new principle, in that it has a spatula so curved that it fits over the dorsum of the tongue, reaching the base of the epiglottis. By the employment of force from behind forward the base of the tongue is pulled away from the pharyngeal wall and fixed there. This allows free breathing space for the patient, and also puts the pillars of the fauces on the stretch so that their separation from the tonsil is much facilitated.

Figure 2 represents an apparatus devised by myself and Dr. F. A. Hamlin which adds very materially to the safety and ease of doing a tonsil operation. It consists of a large bottle in which a partial vacuum is produced by means of a water suction pump. A column of mercury registers the "negative pressure." A tube is attached which is sterilizable and can be passed easily through the mouth or nose into the throat. The pump used is of large size and fits on an ordinary faucet. The bottle exhausts quickly and, being of large size, retains

its efficiency for a considerable period. This apparatus can be set up in any operating room at nominal cost.

A little experience in the use of the gag and tongue fixer is important, and a few words are pertinent as to the method employed in the Cooper College Clinic, where the apparatus has been developed.

The gag and tongue fixer is used usually with a general anesthetic, no gag being necessary where local anesthesia is employed. The patient invariably is given ether with the Allison inhaler, usually preceded by nitrous oxid. The recumbent position with overhanging head is employed. When the patient is anesthetized, a tube is passed through the nose and the ether given by the Bottsford-Junker apparatus. This usually produces some irritation, accumulation of mucus and coughing. It is here that the gag is of use. Such accumulation of mucus in the throat of anesthetized patients, especially where ether is used, is a source of danger. On introducing the gag and tongue fixer the breathing is immediately free except for the presence of the mucus, and this is then easily removed by slipping the tube of the suction apparatus into the throat. Such a method is recommended whenever in giving an anesthetic for any purpose there is liability of aspirating mucus. It is more efficient and in all ways preferable to the unsatisfactory method of wiping out the throat.

In the introduction of the gag, on account of the curve of the tongue fixer, it is sometimes necessary to bend the head backward in order to get it over the tongue. The blade is adjustable and should reach to the epiglottis. The mouth is then opened by pressing the thumb piece and held by the ratchet. The part of the ring resting on the teeth is so bent that it is suitable for infant or adult mouths. One point of great importance in the use of the gag is that the handle be raised by the

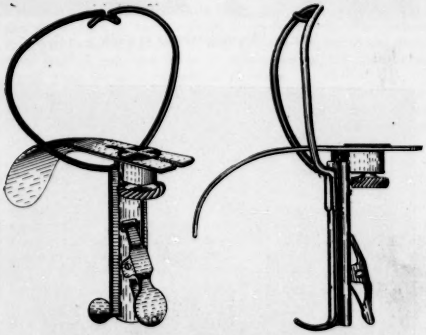


Fig. 1.—Combined mouth gag and tongue fixer.

anesthetist so that the gag fulfill its object, i. e., the bringing forward of the base of the tongue.

The mouth is now open, the tongue fixed away from the field of operation, the breathing is undisturbed and there is no possibility of aspiration of mucus or blood. The overhanging head allows all the latter to flow toward the nasopharynx, where it is quickly aspirated by the suction apparatus. The pillars are drawn taut and the fold of the anterior pillar running to the base of the tongue engages the separating knife readily. The tonsils are removed in their entirety.

I wish to recommend the gag and tongue fixer especially in relation to the hemorrhage that may occur in tonsil operations. It must be admitted that, though the tonsil with its capsule is removed, leaving the superior constrictor bare, this does not do away with all danger of hemorrhage. Where hemorrhage occurs after the patient has recovered from the anesthetic, the usual means of stopping it are first employed. If these fail, the gag and aspirator make it possible to again fix the parts and clean the field. Where readministration of an anesthetic is for some reason undesirable, the patient may be held by force and the gag introduced. He has no control over his tongue or throat, no matter how he

Fig. 2.—Suction apparatus used in tonsil operations.

may gag or struggle, and any vomitus which may appear is aspirated.

The amount of blood lost in this operation by children especially is important. For that reason the bottle has been graduated in ounces and thus the exact amount of blood lost can be measured. If any simple antiseptic solution is used in cleansing the tube the amount of this is deducted from the total amount of fluid in the bottle.

This gag and tongue fixer is manufactured by H. Weniger, 244 Ash Avenue, San Francisco.

135 Stockton Street.

EPIDERMIDOLYSIS BULLOSA CONGENITA

(EPIDERMOLYSIS BULLOSA HEREDITARIA OF KÖBNER)

J. PHILLIP KANOKY, M.D.
AND
RICHARD L. SUTTON, M.D.
KANSAS CITY, MO.

Since Tilbury Fox,[1] in 1879, described two cases of "congenital ulceration of the skin, with pemphigus eruption and the arrest of development generally," and Goldscheider,[2] in 1882, reported his peculiar example of "acantholysis," about 100 cases of the novel affection from which their patients suffered have been placed on record. In addition to these, we desire to report the clinical history and the laboratory findings in a case of

1. Fox, Tilbury: Lancet, London, 1879, i, 766.
2. Goldscheider: Monatsh. f. prakt. Dermat., No. 6, 1882.

Fig. 1.—Showing ruptured and disappearing bullæ on trunk and arms.

Fig. 2.—Milium-like bodies, and atrophy of skin on back of hand.

epidermidolysis bullosa which has been under our care during the past five months.

Patient.—M. W., female, aged 3 years.

Family History.—The father is a farmer by occupation, and a strong, healthy man of 26. The mother is 22, has always enjoyed good health, and has never had a miscarriage. There is one other child, a boy, aged 5. His health is excellent. The cutaneous history of the family is negative. No other member has ever been affected with a similar disorder so far as the grandparents remember.

Personal History.—The patient has never experienced any illness other than the one for which relief is now sought. She was a nine-months baby, and the delivery was uncomplicated. At birth the skin and nails were apparently like those of any other child. The mother's health during the period of gestation was good.

Present Illness.—When the patient was two days old a large bulla appeared on the outer side of the left leg. No cause for it could be assigned. A few days later, she struc' back of her left hand on the side of the crib, and the slight injury resulted

Fig. 3.—Showing atrophy of nails.

Fig. 4.—Section showing absence of elastic tissue in papillary and subpapillary regions and hair follicle.

in the development of a large hemorrhagic bleb one hour later. Since then the skin has never been entirely free from lesions. No part appears to be exempt. Vesicles have developed on the buccal mucous membrane frequently since the third month. As a result of repeated exfoliation, the finger nails have practically disappeared, and the toe nails have become atrophied and deformed. In consequence of injuries to the scalp, and the ensuing development of bullæ, several bald spots have appeared. The patient becomes cold easily, and often complains of chilliness when her brother is not suffering in the least. There has never been excessive sweating. The lesions are almost painless. They itch very little, and heal promptly. They form rather slowly—in from one-half hour to two hours after the receipt of the injury. Commonly they contain only serous fluid, but occasionally, following considerable injury, they are filled with blood.

Examination.—The patient is a well nourished child, a blonde, and rather large for her age. The hair is long and silky. There are [illegible] spots of cicatricial alopecia on the scalp. The teeth are normal. The buccal mucous membrane is paler and smoother than usual, and the tongue is partly bound down. The pharynx appears to be unaffected.

On the body and limbs are numerous lesions in various stages of development or subsidence. On the back of each hand is a considerable number (20 or more) epidermic cysts (minute, pale, flat or cup-topped elevations). In these localities the skin is thin, parchment-like and atrophic. Both palms are marked by the remains of recent bullæ. Friction with a rough towel produces blebs. The seats of former lesions are not wholly immune, but it is more difficult to produce bullæ here than on surfaces which have never been injured.

In four blood counts, made at intervals of one month, the highest number of whites found was 12,400, and the lowest, 6,800. An average of the four gave 39 per cent. polymorphonuclears, 41.2 per cent. small mononuclears, 11.2 per cent. large mononuclears and transitionals, and 8.6 per cent. eosinophils. The serum in the blebs contains very few eosinophils. Exposures to the *x*-rays, for from three to eight minutes, at a distance of 12 cm., a soft tube being used, invariably result in the production of bullæ (as in Berger's[3] case). The lesions heal within the usual period, and we have not found the areas thus treated any less liable to subsequent injury than those which have not been exposed to the rays.

Histopathology.—A piece of the uninjured integument, measuring 1 by 2.5 cm. was excised from the right upper arm under chloroform anesthesia. This material was cut in two, and one portion fixed in alcohol, the other in 10 per cent. aqueous solution of formalin. Later the formalin specimen was divided, and one-half mounted in celloidin, the other in paraffin. For comparison, sections of normal skin, taken, post-mortem, from the upper arm of a three-year-old child, were used, together with some material secured (also post-mortem) from the chest of a fifteen-year-old boy. The sections intended for study of the general structure were stained with hematoxylin-eosin. For elastic fibers Weigert's elastic tissue stain and Unna's orcein mixture were employed. In the hematoxylin-eosin sections the only changes observable in the horny layer are those which might occur as a result of acute edema. The cells are plumper and more rounded than normal, and those in the uppermost layers are less flattened than the ones in the fourth and fifth layers of the control. The outer (upper) portion of the section stains fairly well, but as the granular stratum is approached the coloring becomes faint and pale. The nuclei throughout stain very poorly. In the prickle-cell layer the interepithelial channels are widened and some of the fibrils are broken. There is some granular degeneration of the cells that constitute the lower part of the rete, and the nuclei stain irregularly. The interpapillary processes are swollen and edematous. The papillæ also are swollen, and the blood and lymph vessels are somewhat dilated, but there is no cellular infiltration. In the subpapillary region there are some lymphocytes and considerable numbers of connective tissue cells in the neighborhood of the vessels. The edema is less in the deeper regions, and there is little or no perivascular infiltration, but the vessels here also are dilated. Some of the coil glands are slightly affected. Their component cells stain irregularly, and the lower portions of the ducts are at some points blocked with cells, but there is no dilatation.

It is extremely probable, as Politzer[4] has suggested, that practically all of these changes occur as a result of injuries sustained by the skin during the performance of the biopsy. This also would account for the slight difference in the microscopic findings of various observers. But the fact that there must be a predisposition to injury on the part of the skin must also be taken into consideration. Until recently no plausible reason for this lack of resistance had been found. That it was due to some structural fault had been suggested by Payne,[11] Elliot,[5] Gilchrist,[6] Welch,[7] and others, but the exact nature of this peculiarity escaped the notice of a large number of careful investigators. It is when the stains for elastic tissue are used that this typical and, so far as we know, specific anatomic difference between the sections of normal skin and those of epidermidolysis bullosa is shown.

Stanislawski,[8] working in Podvisotski's laboratory at Odessa, was the first to note the absence of elastic tissue in the lesions of the affection, but, in spite of the fact that the excellent drawings with which his article is illustrated fail to show the presence of elastic fibers in the upper corium, he specifically states that this tissue was normal in the uninjured localities. Engman and Mook[9] pointed out that the elastic fibers were almost or entirely absent in the papillary and subpapillary regions of the derma in not only the bullæ, but in the apparently normal skin as well.

In the sections from our case scarcely a trace of this tissue is to be found in the upper corium. Below the subpapillary region the network is fairly heavy and regular, but as it passes upward it quickly shades off into a thin, friable-looking mesh which disappears practically altogether when the upper derma is reached. The fibers are entirely absent in the hair follicles as well, a fact which has not been noted by previous observers.

The controls show the thick, wavy fibrils running up into the papillæ, and passing into the mucous layer above, to finally terminate between the cells of the basal layer of the epidermis. We consider it extremely probable, as Pusey[10] suggests, that these prolongations of elastic tissue constitute an important factor in binding together the two major layers of the skin, and we believe that the almost complete absence of these fibers in this region in epidermidolysis bullosa undoubtedly explains the predisposition to injury manifested by the integument in cases of this affection.

Inasmuch as this condition is a congenital one in practically every instance, and hereditary in only about 50 per cent. of the cases, it appears to us that the term "epidermolysis bullosa congenita" is to be preferred to "epidermolysis bullosa hereditaria." Dr. Achilles Rose has kindly informed us, however, that the expression "epidermolysis" is incorrect, and that "epidermidolysis" is the proper word to employ. Although it may appear injudicious to suggest a new name for a disorder which has already suffered from over-christening, it is never too late to give an affection its proper designation, and

3. Berger: Archiv f. Dermat. u. Syph., lxxx, 23.

4. Politzer: Jour. of Cut. Dis., 1899, p. 539.
5. Elliot: Jour. of Cut. Dis., 1895, p. 10.
6. Gilchrist: Jour. of Cut. Dis., 1899, p. 539.
7. Welch: Quoted by Gilchrist, Jour. Cut. Dis., 1899, p. 539.
8. Stanislawski: Russk. Jur. of kozhn. i. ven bolezn, v, 1903.
9. Engman and Mook: Jour. Cut. Dis., 1906, p. 55.
10. Pusey: Prin. and Prac. Derm., 1907, p. 23.
11. Payne. Lancet, 1893, ii, 425.

so, in this instance, the title "epidermidolysis bullosa congenita" is used.

We desire to express our indebtedness to Dr. Harry Czarlinsky, deputy coroner of Jackson County, for a liberal supply of post-mortem material, and especially to Dr. O. L. Castle for his kindness in preparing for us a large number of microscopic specimens.

610 Commerce Building.

EXPERIMENTAL EPIDEMIC POLIOMYELITIS IN MONKEYS

SIXTH NOTE: CHARACTERISTIC ALTERATIONS OF THE CEREBROSPINAL FLUID AND ITS EARLY INFECTIVITY; INFECTION FROM HUMAN MESENTERIC LYMPH NODE *

SIMON FLEXNER, M.D., AND PAUL A. LEWIS, M.D.
NEW YORK

In our last communication,[1] we pointed out that by making use of the filterable nature of the virus of epidemic poliomyelitis we had succeeded in detecting it in the nasal and pharyngeal mucosa of the monkey, from which we concluded that one path of elimination of the virus was by way of the nasal mucosa through its lymphatic connections with the pia arachnoid of the brain. On the basis of this observation, we assumed that infection in the monkey might be accomplished by the reverse route, namely, from the nasal and pharyngeal mucosa, and that this route probably represents one of those traversed by the virus in the course of spontaneous infection in man. We have made some experiments covering this point and have ascertained that when an emulsion of the spinal cord from a recently paralyzed monkey is brought into intimate contact with the scarified mucous membrane of the nose and pharynx infection results. In the protocol that follows, note should be taken of the location of the paralysis in the muscles of the upper half of the body.

EXPERIMENT 1.—March 15, 1910: *Macacus rhesus*, ether anesthesia; scarified nasal and pharyngeal mucosa; dropped a milky suspension of spinal cord into nose and rubbed it in gently with cotton pledget. March 18, reapplied same suspension. No immediate effect. March 21, 8 a. m., paralysis of muscles of neck and arms; legs strong but animal cannot stand; died during night of the same day.

In a recent publication,[2] we described the series of changes in the meninges which we believe precede the development of the vascular impediments that ultimately cause paralysis. We have followed the alterations which take place from day to day, following intracerebral inoculation of the filtrate, and have found them to be of rapid development and characteristic nature.

When a considerable dose of filtrate is injected, the cerebrospinal fluid secured twenty-four hours later by lumbar puncture is of normal quantity but contains a considerable number of small cells, hardly exceeding a lymphocyte in size but showing a polyform nucleus, a few lymphocytes, and some red corpuscles. At the expiration of forty-eight hours, the white cells have increased in numbers, but the cells with polyform nuclei still predominate. At the expiration of seventy-two hours, a large number of mononuclear cells have appeared and the fluid presents a striking opalescent appearance. On the day of paralysis, the fluid tends to be only slightly cloudy and contains a mixture of large and smaller (lymphoid) mononuclear cells, and a few cells with polymorphous nuclei.

The fluid withdrawn on the third day, which is several days in advance of the appearance of paralysis, contains the virus, and when injected intracerebrally it is capable of setting up paralysis in another monkey.

EXPERIMENT 2.—March 10, 1910: Inoculated *Macacus rhesus* intracerebrally, under ether anesthesia, with 1.5 c.c. of fluid obtained by lumbar puncture on third day after injection of filtrate. March 16, paralysis of left arm. March 17, paralysis of arms, legs and neck. March 21, died. Lesions characteristic.

These experiments show that the cellular changes in the meninges and cerebrospinal fluid begin immediately after the intracerebral injection of the filtrate and are thus present several days before the onset of the paralysis. Should this observation be confirmed for human beings, a valuable method of diagnosis of atypical and abortive or non-paralytic cases would be secured. An abrupt change in the nature of the cerebrospinal fluid, from being opalescent, rich in cells and spontaneously coagulable just before or at the time of paralysis, to a more limpid fluid, poorer in cells immediately after, often occurs. The spinal cord removed on the third day after an intracerebral injection shows beginning meningeal infiltration and normal vascular and nervous structures.

Through the kindness of Dr. W. T. Longcope of Philadelphia, we secured portions of the spinal cord and a mesenteric lymph node, preserved in glycerin, from a child of five years who had died on the fifth day of illness. The child was under the care of Drs. Marcy and Hodge. The symptoms were suggestive of infantile paralysis—onset sudden. Sections prepared from the spinal cord, kindly sent by Dr. Longcope, showed characteristic and extensive lesions of epidemic poliomyelitis.

Suspensions of the glycerinated spinal cord and mesenteric lymph node were each injected intracerebrally on March 8, into a monkey (*Macacus rhesus*). The animal inoculated with the spinal cord was well until March 19, when weakness and paralysis of the legs appeared. It was killed with ether. Characteristic microscopic lesions existed in the spinal cord. The monkey having received the suspension of the lymph node remained well until March 18, when paralysis of the legs and left arm appeared. Lumbar puncture yielded a faintly cloudy fluid containing an excess of mononuclear cells. The animal was killed with ether. Characteristic lesions were present throughout the spinal cord.

This experiment proves the virus of poliomyelitis is contained not only in the central nervous system but in mesenteric lymph glands, and suggests that it may be present in other organs in human subjects of the disease.

* From the Laboratories of the Rockefeller Institute for Medical Research, New York.

1. THE JOURNAL A. M. A., Feb. 12, 1910, p. 535.
2. Jour. Exper. Med., March, 1910, p. 227.

FORMALDEHYD POISONING

FRANK A. ELY, M.D.
DES MOINES, IA.

In view of the paucity of literature[1] on formaldehyd poisoning, the following case seems worthy of record:

The patient, a boy of 3 years, gained possession of a bottle containing a few drops of a 40 per cent. solution of formaldehyd which he tipped to his lips as though in the act of drinking. He was immediately seized with a paroxysm of coughing and choking, but the attack soon ceased. The child's mouth was rinsed out thoroughly with water and he was soon at play as if nothing had happened.

1. References to the literature are given in THE JOURNAL, Jan. 29, 1910, liv, 370, and Jan. 15, 1910, liv, 221.

On the next day I was called and found the child suffering from a hoarse, laryngeal cough with accelerated and labored breathing. The pulse and temperature were normal and in every respect the child seemed to be in perfect health.

I made laryngeal application of adrenalin with temporary benefit. Inhalations of steam were advised and frequent teaspoonful doses of olive-oil were ordered to allay any pharyngeal or esophageal irritation.

Fifteen hours later I was called in great haste and found the child deeply cyanosed and showing every sign of laryngeal obstruction. I immediately transferred the patient to a hospital and called a specialist in consultation, hoping that intubation or tracheotomy might be performed and thus relieve the respiratory difficulty. Upon the arrival of the consultant, it was decided to defer operative procedures for the reason that we could not be at all sure that the obstruction did not extend low down in the trachea, in which case the introduction of a tube might produce an immediate fatal termination. Repeated applications of adrenalin were made and the breathing became somewhat easier, but during the night, eight hours after admission to the hospital, the child died.

Post-mortem examination, made six hours after death, showed a marked thickening of the mucous and submucous coats of the epiglottis, larynx and trachea, with a superficial necrosis which extended to the bifurcation of the trachea. The esophagus showed no pathologic changes, nor was there evidence of destruction of the mucosa of the mouth and pharynx.

The extensive thickening of the tracheal mucous membrane proved the wisdom of non-operative treatment because the morbid changes extended so low down that even a low tracheotomy would have failed to relieve the condition.

The points of greatest interest in this case are as follows:

1. The absence of systemic disturbance other than that produced by respiratory obstruction.
2. The absence of destructive changes in the buccal, pharyngeal and esophageal mucous membranes.
3. The extensive infiltration and necrosis of the tracheal mucosa extending below the point where a tracheotomy operation would be of value.

605 Citizens National Bank Building.

IODIN AS AN ASTRINGENT, ANTISEPTIC, DISINFECTANT AND GERMICIDE IN MOUTH DISEASES

EUGENE S. TALBOT, M.D., D.D.S.
CHICAGO

For an astringent, antiseptic, disinfectant and germicide in the mouth, there is nothing so convenient and quick acting as tincture iodin. I have used this drug as an astringent, antiseptic and disinfectant since 1878, but did not know of its germicidal properties until six years later, although I was obtaining the desired results of germ destruction.

Patients present themselves with fetor of the breath, pus about the teeth, inflamed gums, diseased alveolar processes, acid mucus and saliva, the latter being also ropy and stringy, plaques on the teeth and decay with all the forms of bacteria from the most harmless to the more dangerous pathogenic microorganisms such as the pneumococcus, diphtheria bacillus, tubercle bacillus and the germs of children's diseases. Miller has demonstrated more than fifty varieties of microorganisms in the mouth. Pus germs are often present in and about the necks of the teeth and easily infect wounds and inflamed tissue. These germs are also taken into the stomach at every swallow and some pass through into the intestines. While most of the better class of patients possess fairly cleanly mouths, yet from 12 to 20 per cent. of all patinets have pus germs in the oral cavity.

Tooth decay is due to lactic-acid ferment and nearly every person has it to a greater or less extent. Clinic and dispensary patients, and especially the poorer classes who never use brushes, washes or powders in the mouth, possess regular cesspools of filth. Before the fingers, even, are placed in such mouths, the mucous membrane, gums and teeth should be thoroughly painted—completely covered—with tincture of iodin. Enough iodin should be applied to run in between the gums and the teeth, and then it should be allowed to dry; afterward the mouth should be rinsed with water.

Attention was first called to this method of procedure by my researches on interstitial gingivitis. The pathology of this disease showed the inflammation to be deep-seated throughout the alveolar process. In order to reach this inflammation, iodin alone would penetrate the bone.

All people after the temporary teeth erupt have interstitial gingivitis more or less throughout life. The mouth of every patient of mine, therefore, who has any operation on the mouth or teeth, since I began this method, is treated to an iodin bath before or after the operation. This may occur every day, every other day or whenever the patient has an appointment.

The officinal tincture of iodin contains 7 per cent. of iodin dissolved in alcohol to which is added 5 per cent. of potassium iodid. This preparation, if used often will cause the mucous membrane to become tender and sore; it will also, in some patients, destroy the mucous surface. To overcome this difficulty, many years ago, I formulated the following, which I have called iodoglycerole:

Zinc iodid	15 parts
Water	10 parts
Iodin	25 parts
Glycerin	50 parts

The proportions were suggested by Prof. C. S. N. Hallberg of the University of Illinois School of Pharmacy, in order to obtain a clear preparation without deposits. As compared with the ordinary tincture of iodin, its astringent properties are greatly increased, the glycerin causes rapid absorption and the irritating effects are reduced to a minimum. The penetrating effect is remarkable. The glycerin thickens the preparation and prevents it from mixing with the saliva and running over the mouth as the ordinary tincture will do. Long, round, wood applicators can be obtained at the drug and instrument houses and on one end cotton is wound; this is saturated with the preparation and the gum margins above and below painted. The jaws are closed, the lips and cheeks distended and the application made as before, the teeth are also covered; the lips and cheeks are held away from the jaws until the iodin has dried.

No one drug will destroy lactic-acid bacilli and their ferment and thus stop tooth decay like iodin. Frequent applications will destroy all germs in the mouth and reduce mouth and general disease to a minimum.

Before operations on the mouth and fauces, the gums, teeth and mucous membrane should be given an application of iodin; especially in the removal of tonsils. After this treatment, and after the iodin has become absorbed, the tonsil or part to be operated on should receive similar treatment. This application should be made from 10 to 15 minutes before operation.

To prevent contagions and infections among public school children, their teeth, gums, and mucous membrane should be painted with iodoglycerole as often as once a month, during the school term. This method will greatly reduce tooth decay.

103 State Street.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1910," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

FILICIC ACID AND RELATED SUBSTANCES

Aspidium and pharmaceutical preparations thereof have long been used as teniafuges. The most recent work indicates that aspidium probably contains the following constituents, in approximately the amount indicated: Filicic acid, 3.5 per cent.; flavaspidic acid, 2.5 per cent.; albaspidin, 0.05 per cent.; aspidinol, 0.10 per cent.; flavaspidin, 0.10 per cent.; amorphous acid, 5.0 per cent. and filicic nigrine, 6.0 per cent. These substances are, for the greater part, derivatives of phloroglucinol, and some of them are ketones possessing acid characters.

The various formulas assigned to the filicic acids and the different results reported regarding their physiological activity, have given rise to much confusion, leaving the chemistry in an unsettled condition. One of the first formulas assigned to filicic acid is that of Luck—$C_{20}H_{30}O_9$, which differs considerably from the formula—$C_{14}H_{18}O_5$—given this substance by Grabowski and $C_{14}H_{16}O_5$, as suggested by Daccoma. Later two forms, a crystalline and an amorphous filicic acid, were recognized by Poulson, who suggested the formula, $C_{30}H_{40}O_{12}$ for the crystalline filicic acid and $C_{30}H_{42}O_{13}$ for the amorphous acid, which latter he considered as the active therapeutic principle of aspidium. Poulson believed the crystalline acid to be the anhydride of the amorphous acid. More recently, Gallas has stated the formula for both the crystalline and the amorphous filicic acid to be $C_{18}H_{26}O_6$. Gallas and later Kraft concluded that one form of the acid was the lactone of the other form. Filicinic acid, which has the formula ($C_9H_{16}O_5$) is sometimes confused with filicic acid. Besides a difference in the theories regarding the constitution of the various filicic acids, there has been considerable controversy over the anthelmintic properties of these substances.

Our knowledge of the subject is very imperfect, but the majority of authors still accept filicic acid as one of the active constituents of aspidium.

FILICIC ACID, AMORPHOUS.—Acidum Filicicum Amorphum.—Amorphous filicic acid is an organic acid $C_{30}H_{42}O_{13}$, obtained from several species of aspidium.

Amorphous filicic acid is a white, or yellowish powder, without odor or taste, melting at 125° C. (257° F.), soluble in cold alcohol.

Actions and Uses.—Amorphous filicic acid has been recommended as an anthelmintic, and is generally considered one of the active principles of several species of aspidium.

Dosage.—0.5-1.0 Gm. (8 to 15 grains) given with calomel or calomel and jalap.

Note:—The crystalline filicic acid, preferably designated as filicinic acid, which is considered as an anhydride of the amorphous, is devoid of anthelmintic action, and must not be used in place of the amorphous.

FILMARON.—Filmaron, $C_{17}H_{24}O_{10}$, is an active anthelmintic constituent obtained from the ethereal extract of aspidium (the rhizome of Dryopteris Filix Mas).

Filmaron is obtained from the male fern extract by isolating it in the form of a metallic salt, from which the free filmaron is liberated and suitably purified.

Filmaron occurs as a straw-colored amorphous powder, insoluble in water, difficultly soluble in ethyl and methyl alcohols, and rather difficultly soluble in petroleum ether. It is readily soluble in all proportions in ether, acetic ether, amyl alcohol, chloroform, benzene, carbon disulphide, and acetone, and also, though with partial decomposition, in solutions of the alkalies and alkali carbonates. The alcoholic solution exhibits a slightly acid reaction. Filmaron melts at about 60° C. (140° F.). It exhibits a strong tendency to cake together to form a resinous mass which is difficult to reduce to powder and dispense, hence it is not marketed in substance, but as a 10 per cent. castor oil solution, which is known as "Filmaron oil."

0.5 Gm. filmaron and 5 Gm. pumice stone, and 1 Gm. magnesia are finely triturated with 250 Cc. water, the mixture shaken for half an hour, and then filtered. On passing a rapid current of carbon dioxide through the filtrate, a voluminous, flocculent precipitate forms; the filtrate should afford but very slight precipitate on the addition of hydrochloric acid.

On dissolving 0.1 Gm. filmaron in 0.2 Gm. acetic ether or 0.2 Gm. carbon disulphide by rotation in a test tube, and setting the stoppered tube aside for three days, no separation should have taken place at the end of this time (absence of other male fern constituents; filicic acid and flavaspidinic acid).

0.1 Gm. filmaron should completely dissolve in 0.5 Gm. warm petroleum ether, and leave no more than a slight trace of undissolved substance. To detect the filmaron in the castor oil solution (filmaron oil), dilute the filmaron oil with ether, shake out with sodium hydroxide solution, acidulate the alkaline liquid, and then take up the liberated filmaron with ether. On evaporating the ether the filmaron is obtained as a residue.

Actions and Uses.—Filmaron is said to exhibit the specific action of male fern extract and to be useful as an anthelmintic for expelling intestinal parasites.

It is claimed to be devoid of the injurious side actions sometimes exhibited by the oleoresin of male fern and to be harmless when given in the dose necessary for the expulsion of tape worm.

Dosage.—See Filmaron Oil.

Manufactured by C. F. Boehringer & Soehne, Waldhof near Mannheim (Merck & Co., New York). U. S. trademark No. 40,558.

Filmaron Oil.—Filmaron oil is a 10 per cent. solution of Filmaron in castor oil.

Dosage: 10 Cc. (2½ fluidram).

(*To be continued*)

Therapeutics

CHOREA

Although the treatment of this disease is frequently discussed, its management is still too little understood, and the mistake of giving large doses of arsenic in the belief that, because the symptoms often abate during its administration, arsenic did it (it being forgotten that acute chorea is a self-limited disease) is still prevalent. Poisonous doses of arsenic can never be beneficial in chorea.

Dr. John Allan, of Edinburgh, Scotland, in the *American Journal of the Medical Sciences*, February, 1910, offers some valuable recommendations for the management of chorea. He well states that the most important factor in its successful treatment is more or less absolute rest and removal from all sources of frets and teasing which may occur when a child so afflicted, even mildly, is sent to school or allowed to associate with other children. Even if the disease is mild, the child should be put absolutely to bed, or at least should be put to bed several times during the day. From three to five weeks of bed rest and then two or three weeks of intermittent bed rest is the greatest promoter of quick recovery and is the best prevention of cardiac complications. Hard playing or hard exercise, or even much walking, should be prohibited for some weeks after a child has recovered sufficiently to be about. During the period of rest in bed massage should be administered daily, as soon as there is no fever, and, of course, there may be no fever at all. The massage should be more or less general, depending on its effect on the child.

More or less isolation of a choreic child is essential. Only those persons should come near the patient whose judgment is such as not to fret the child by their pres-

ence. When it is possible a sensible nurse is the best caretaker of the patient, as nervous, neurotic or fretted mothers are not the best nurses for these children.

The advantage of any particular specific diet is doubtful. The diet should depend on the acuteness of the symptoms or the amount of fever. If there is fever, the diet should be light but nutritious, perhaps mostly milk. If there is no fever, a sufficient, easily digestible, mixed diet, with perhaps meat in small amount only, is the best. Of course, tea, coffee, alcohol or any other excitants are prohibited.

It is essential that the bowels should be kept active in the manner found the pleasantest and the simplest, preferably with cascara or with phenolphthalein.

Warm baths every day or every other day, if the patient's movements are not too severe, are quieting and restful, and, with the massage, keep the skin in good condition.

In spite of the long-continued use of arsenic in chorea, it may be stated that there is no specific treatment for this disease. Those who advise the use of arsenic state that it must be rapidly pushed to the point of saturation of the tissues, i. e., to the point of tolerance. Some state that, if it does no good in the first two weeks, it will do no good at all. Others object to its use on account of the fact that in order to do good it must literally poison the patient; in other words, that the nervous system is more or less paralyzed by it if it inhibits the muscle movements in chorea. If given in small doses it probably is of little, if any, value, as when the disease becomes better it becomes better because it is time for the chorea to improve (it tending to recovery), but it does not recover on account of the small doses of arsenic. Arsenic pushed to rapid effect will frequently cause albuminuria and even nephritis, and casts and blood cells will be found in the urine. If the urine of every patient were studied daily during the administration of large doses of arsenic, less arsenic would be given. While small doses of arsenic in many anemic conditions (and in chorea the patients are often anemic) will stimulate the production of red blood corpuscles, large doses of arsenic will often cause destruction of red blood corpuscles.

Whether or not chorea is allied to rheumatism, Allan believes that acetyl-salicylic acid (aspirin) is a drug of great value in its treatment. He finds the best method of administering it to children is as follows:

℞.	gm. or c.c.		
Acidi acetyl-salicyli	8		ʒiiss
Acaciæ	q. s.	or	q. s.
Syrupi aurantii	25		fl.ʒi
Aquæ chloroformi, ad	100		ad, fl.ʒiv

M. et Sig.: A dessertspoonful, in water, every 4 hours. [This must be well shaken.]

This dose, he finds, is suitable for a child 6 years of age, but it should be increased as the child's age increases until at about puberty he gives from 90 to 120 grains a day. He says that acetyl-salicylic acid should never be given in tablets, and should not be prescribed with alkalies. He finds less symptoms of salicylism than occur from the salicylate of sodium and he does not find it depresses the heart. He quotes the German authorities as believing that acetyl-salicylic acid has an hypnotic as well as analgesic effect.

At times strong hypnotic drugs are required, and Allan prefers sulphonethylmethanum (trional), but some patients require stronger quieting drugs, as chloral and chloralamid.

If the heart is weak and a cardiac tonic is required, he prefers strophanthus in the form of the tincture.

As soon as convalescence is established, iron is certainly required. It may or may not be combined with small doses of arsenic. Of course, the acetyl-salicylic acid should be stopped as soon as the choreic movements have ceased.

It is needless to emphasize the necessity for removal or correction, as soon as possible, of any reflex irritation that may have caused or aggravated the chorea, be this intestinal worms, carious teeth, phimosis, clitoris adhesions, eyestrain, otitis media, or adenoids.

A patient who has recovered from an acute chorea should be given an outdoor, quiet life for several months. School work should be absolutely prohibited. If the chorea has occurred about puberty in young girls, all excitement and the strain of school life should generally be forbidden until menstruation is thoroughly and regularly established. Disturbances of menstruation are frequently the cause of chorea.

UNNECESSARY BLINDNESS

The caption of this article is copied from the *Journal of the Minnesota State Medical Association and the Northwestern Lancet* (February, 1910). The very association of these two words presents a truth that cannot be too frequently emphasized, and still, with all the discussion on the subject, it is not daily recognized that ophthalmia neonatorum, with its dire consequences, can and should be prevented. A symposium on ophthalmia neonatorum is presented in the above-mentioned journal, and ends with the following conclusions:

"1. The conjunctiva of the newly born is peculiarly liable to infection.

"2. Many germs may cause the infection, but the gonococcus is responsible for at least 65 per cent. of the cases and for nearly all of the severe infections.

"3. Ophthalmia neonatorum may almost surely be prevented.

"4. The 2-per-cent. silver nitrate is the surest prophylactic.

"5. The 1-per-cent. silver nitrate is nearly as valuable.

"6. Bichlorid of mercury, 1-2,000, is a good substitute and should be used if one has not the silver.

"7. If a prophylactic be used in the eyes of every newborn baby, the present rate of ophthalmia neonatorum will be greatly reduced.

"8. The treatment of the disease should always be turned over to the ophthalmologist."

Practical Applications of Salt in Epilepsy.—A. Ulrich has found that the symptoms of bromin poisoning rapidly subside when salt is given internally; the motor symptoms especially yield at once to the action of the salt. Even the *fetor ex ore* subsides under its influence. In his article on the subject in the *Neurologisches Centralblatt*, 1910, xvi, 74, he states that bromin acne is also rapidly cured by local application of a 10 per cent. salt solution. There seems to be no doubt, he says, that salt is the antidote to bromin. He also reports that he was able to bring on an epileptic seizure in 12 cases of genuine or Jacksonian epilepsy by giving 20 or 30 gm. of salt a day for a few days for diagnostic and therapeutic purposes. In one of the 3 cases reported in detail, the patient had had no severe seizure for several months and was in a condition of excitement bordering on mania. Administration of 30 gm. of salt on two successive mornings brought on a seizure after which the patient's mind was apparently normal. In another case the salt was given to disclose a possible epilepsy in a medicolegal case, and the findings were positive.

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[For other information see second page following reading matter]

SATURDAY, APRIL 2, 1910

THE RAT AND ITS RELATION TO THE PUBLIC HEALTH

Rats probably exceed any other variety of mammal in the number of individuals, and their fecundity and secretive habits add greatly to the difficulties of the rat problem. Under normal conditions a female rat will bear three to five litters of ten each year. At this rate, one pair of rats would in five years increase to over nine hundred billion, provided all survived. The number of rats in any given place is limited only by the amount of available food and the facilities to nest.

The economic losses from rat depredation in the United States alone are estimated to vary from thirty-five to fifty million dollars a year. They consist mostly in damage to grain, merchandise, poultry, eggs and other foodstuffs. Rats also set fire to buildings, destroy furniture, gnaw lead pipes, weaken embankments, undermine foundations, piers, etc. So far as anyone has been able to make out, rats serve man no useful purpose. They are a wary, alert and dangerous foe, and it will require intelligent, energetic and unrelenting efforts to suppress them. In certain places and at certain times the suppression of the rat has become almost a necessity for the preservation of the human race. The extermination of the rat is almost a hopeless task, and seems to be a biologic impossibility.

It has been found that the rat is one of our most serious and dangerous enemies. It has followed man into all parts of the globe, and where the rat goes, plague and other diseases may go. This rodent in addition to carrying plague is also the reservoir of trichinosis and ten other parasites of man. Furthermore, rats have leprosy, although no direct association between rat leprosy and human leprosy has yet been made out. Rats also have cancer. These tumors occur "spontaneously" among wild rats, and may be readily transferred from rat to rat. Rat cancer is now being studied in many laboratories and in many parts of the world, and it is probable that he who can cure rat cancer will have little trouble in controlling this scourge in man.

Special opportunities for observation and study of the diseases of rats, their relation to the public health and the problems connected with their destruction, have been afforded officers of the Public Health and Marine-Hospital Service, who have had practical dealings with this question since plague in the present pandemic reached our western shore about ten years ago. These experiences have just been collected in an admirable volume[1] published by the Public Health and Marine-Hospital Service, with the collaboration of experts in the Department of Agriculture. This work is particularly timely, and should interest sanitarians and health officers everywhere, especially as it is the first and only publication in which the important known facts on the subject are brought together in an authoritative and satisfactory way.

In this bulletin Lantz gives a description of the genus *Mus* in America and a classification of rats. He also refers to their habits in breeding, feeding, migration, invasion and fecundity, and discusses their natural enemies. The facts presented emphasize the great difficulty in ridding cities of these pests.

McCoy, who has had large experience with the problem in California, discusses plague infection in rats, and describes methods for their examination. He presents results of his investigations to show that the wild rat in San Francisco is not especially susceptible to plague infection, and that a certain percentage of these animals appear to enjoy a natural immunity to plague.

Brinckerhoff discusses the question of rat leprosy, and states that it has no known bearing on human leprosy. It is believed, however, that a further study of this disease in the rat may throw much additional light on the problem presented in man, for the two diseases are strictly analogous. Banks presents information in condensed form, having practical bearing on the ectoparasites of the rat. Rucker explains methods of trapping rats, of cutting off their food-supply, of destroying existing nests and of preventing the making of new ones.

Stiles discusses the internal parasites of rats and mice in relation to the diseases in man, and emphasizes the fact that trichinosis will probably never be eradicated from man until it is eradicated from rats, or until rats and mice are killed off. A national campaign directed against trichinosis, therefore, must take the rat into consideration.

The problem of fleas associated with rodents and their relation to plague is fully considered by Fox and Blue. A point of special importance, which cannot be emphasized too strongly, is the plague infection in ground-squirrels in California, and the danger lest these animals become responsible for the establishment of a permanent focus on the Pacific Coast of the United States, just as the marmots have established a permanent focus in India.

Rat-proofing as an antiplague measure is considered by Creel. Rodents must be "built out of existence." Houses in the Philippines are rat proof by reason of having thin walls and being elevated above the ground, affording no refuge for rats, and as compared with the

1. The Rat and Its Relation to the Public Health, by various authors. Prepared under the direction of Surgeon-General Walter Wyman, U. S. Public Health and Marine-Hospital Service, 1909. This bulletin contains eighteen different articles.

appalling epidemics of plague in India and China but few people die of the disease.

Rat-proofing is one of the most practical of the anti-plague measures, and while it is expensive, it will finally have to be adopted by all cities desiring to improve permanently their sanitary condition in so far as plague is concerned.

The bulletin contains an article by Rosenau on the inefficiency of bacterial viruses in relation to rat destruction. As a result of his investigations in the Hygienic Laboratory and the reports of investigations and practice elsewhere, he concludes that these bacterial viruses have signally failed to accomplish the results for which they were intended. An important point brought out is that these cultures are not entirely harmless to man, as has been previously stated. It appears also, that they are comparatively expensive, and have little, if any, advantage over chemical poisons.

Heiser describes the methods of procedure adopted in Manila for eradicating plague by destroying infected rats, and presents graphic charts showing a practical method of dealing with this infection in city districts. Hobdy describes the migration and voyage-making tendency of the rodent, its destructiveness aboard ship, and its facility in adapting itself to unusual conditions and surroundings. As many as seventeen hundred rats have been collected from one vessel after fumigation. Kerr emphasizes the important fact that the rat has become a factor in international sanitation, and briefly outlines the provisions contained in international sanitary agreements for their extermination. An intimate knowledge of the rat has become essential to sanitarians, and those familiar with the subject realize that the difficulties are proportional to the gravity and magnitude of the problem.

This troublesome pest the rat has received much attention recently in other parts of the world. In Denmark, for instance, a legalized warfare against rodents has been started, principally on account of the part they take in transmitting trichinosis. In England there exists the incorporated Society for the Destruction of Vermin, and in other places destruction is being agitated both from economic and public health standpoints. In Japan four million rats were destroyed during the recent plague campaign in Kobe and Osaka. Similar work has been forwarded in Australia under the direction of Dr. J. Ashburton Thompson, in San Francisco under Dr. Blue, and in other places where plague has received proper attention from the health authorities.

The rat has grown from a nuisance to a danger, and the control of this rodent has become a serious public health problem. It must be considered in the drafting of city ordinances, and energetically hunted down in municipal house-cleaning. The city beautiful must not merely contain marble palaces, fine parks and imposing boulevards; it must provide for the destruction and suppression of all vermin, especially the rat.

CHANGES AT THE UNIVERSITY OF PENNSYLVANIA

It has long been recognized that, while progress in the medical sciences in this country in the last generation has been, relatively speaking, greater than in any other country, the clinical branches have, on the whole, lagged far behind in the academic sense, and clinical departments in most schools have not advanced very far beyond what they were a generation ago. The improvement in the scientific branches has been due chiefly to the recognition of the fact that the imperative demands of active practice absorb too much time to permit a man to teach one of these branches properly, and that in all our best schools such men are now devoting their whole time to teaching and investigation—the two essential requirements of their positions. To contribute to medical knowledge is of essential importance, for, aside from the value of new knowledge, no one can remain a good teacher unless he keeps himself familiar with progress through the essential stimulus that comes through contributing to that progress.

In recent years it has appeared to many that the great need of medical teaching has been that the most important clinical chairs should be held only by those whose interests lie more largely in teaching and investigation than in active practice, and who will train others in these same lines of work, for the teaching of clinical branches and the lines of investigation that are necessarily followed in them are now so complex that it is impossible to combine active general practice with such positions, just as it was earlier recognized to be impossible to combine practice with the teaching of the medical sciences. It is worthy of consideration, however, whether clinicians who devote themselves to teaching and investigation, thereby acquiring special skill in certain ways, should not place themselves as consultants at the service of the public so long as such practice is sufficiently limited as not to interfere with their academic work and influence. Their teaching also could profitably be supplemented and reinforced by the teaching of high-class men actively engaged in general practice.

In accordance with this sentiment one of the most important features of the program recently announced by the University of Pennsylvania is the reorganization of the clinical chairs so that the occupants will give the larger part of their time to university work. A beginning has been made with the chair of medicine. Dr. James Tyson, after his long years of service, with the deep affection of every one, has resigned, his resignation to take effect at the end of this academic year. He will be succeeded by Dr. David L. Edsall, who will have as his colleagues Dr. John H. Musser and Dr. Alfred Stengel, who now hold chairs of clinical medicine. Equally radical changes in other clinical chairs are a part of the program for the future.

The program also includes radical changes in the departments of pathology, pharmacology, and the establishment of new departments of research medicine,

physiologic chemistry and comparative pathology, and the reorganization on new lines of the Henry Phipps Institute for the study, prevention and treatment of tuberculosis.

The Henry Phipps Institute is to be organized into three distinct lines of work—social, laboratory and clinical—and all these departments will be used to a more or less considerable extent in teaching medical students, and thus in spreading more widely knowledge concerning tuberculosis and the methods of attacking it. Generous financial provision has been made for the departments of research medicine and physiologic chemistry and for the Phipps Institute, the endowment for these three consisting of gifts aggregating $800,000.

The department of pathology will be in the hands of Dr. Howard T. Ricketts of the University of Chicago; the head of the department of pharmacology is not yet announced; the department of research medicine will be in the hands of Dr. Richard M. Pearce, now professor of pathology of the University and Bellevue Hospital Medical College, while Dr. Alonzo Englebert Taylor of the University of California will head the department of physiologic chemistry, and Dr. Allen J. Smith the new department of comparative pathology.

These extensive changes in the oldest medical school in the United States are sure to have a profound influence. They constitute another illustration of the present rapid development of medical education in this country.

SENATOR OWEN ADVOCATES A DEPARTMENT OF HEALTH

The declaration of President Taft at the University of Pennsylvania last year that "certainly the economy of the union of all health agencies of the National Government in one bureau or department is wise" bids fair to find expression in law. This is shown by the bill introduced by Senator Owen, providing for a Department of Public Health. In advocating the bill,[1] Senator Owen pleaded the law of precedent in accordance with which other departments have been created by assembling and coordinating pre-existing bureaus, and urged Congress to redeem the pledges on this subject made in the platforms of both the great political parties. He also pointed out the necessity of having a department with ample power, as the only means of conferring on the health agencies of the country such prestige and influence as would afford adequate protection to the people.

Senator Owen made some statements which tend to impeach the Department of the Treasury as a competent administrator of the health interests of the country. He stated that when he applied to the Surgeon-General of the Public Health and Marine-Hospital Service for certain information, he, a senator of the United States, could not get the information for two weeks or until the Secretary of the Treasury had returned to Washington. When the Surgeon-General finally made a statement to Senator Owen it was by express permission of the Assistant Secretary of the Treasury. This is an illustration of the humiliating status of our national health service under the existing system. It is true that until recently the Public Health and Marine-Hospital Service has been more distinctly autonomous than would seem to be indicated by the two foregoing incidents, but it was only by tolerance and not because the Secretary of the Treasury did not have the power at any time to subordinate that service by executive order. Nor can we reproach the Secretary of the Treasury. Central responsibility must carry with it central authority, and in national health administration that authority, under the President, resides in the Secretary of the Treasury. So it is not against the Secretary of the Treasury nor against the Surgeon-General of the Public Health and Marine-Hospital Service that Senator Owen directs his shafts, but rather against the laws that permit a system that belittles that which ought to be dignified and weakens that which ought to be strengthened.

The action of the Department of the Treasury during, we believe, the secretaryship of Hon. Leslie M. Shaw, with respect to the bubonic plague at San Francisco, is urged by Senator Owen as an additional reason why that department should not remain in executive control of our health interests. The charge in this instance involves the suppression of the report of the board of experts from Feb. 26, 1901, to April 19, 1901. Senator Owen said: "The commercial interests of San Francisco had triumphed over the bureau and compelled the Surgeon-General, the head of the bureau, by order of his superior officer, the Secretary of the Treasury, to agree to suppress the report contrary to the obvious moral and sanitary duty of the United States. From that time bubonic plague has widened the area of its terribly dangerous infection from Los Angeles to Seattle, passing from rat to rat and squirrel to squirrel and from these animals to an occasional human being through the agency of the common flea."

With respect to this charge the Surgeon-General of the Public Health and Marine-Hospital Service, "by permission of the Assistant Secretary of the Treasury," dictated this statement: "There was a time when the commission of three experts was sent out there and verified the existence of the plague and it was known that this full report was on the way when it was evident a great sensation was expected and the full report of the commission was not published immediately, although the essential facts were published. It was evident that a wide sensation beyond what was evident and what was proper could have been made out of the report of this committee and it was so handled that, while the central facts were not delayed, still the sensational report which would inflict injury on the State of California for an indefinite number of years was prevented."

Apparently the Treasury Department was more concerned about the receipts of the custom house at San

1. Department of Medical Economics, p. 1159.

Francisco than about stamping out the plague. Evidently "revenue" and "health" are such incompatible propositions that, in fairness to either, they cannot be administered jointly by the same agency.

Senator Owen has made clear that any attempt at progressive legislation must be in the direction of a department and not of a bureau, since the latter is the very thing from which we are endeavoring to escape. On this point, Senator Owen insists, as President Taft pointed out, that "it is generally agreed that these bureaus should all be brought together as one working body. To bring established bureaus under a new 'bureau of public health' would be to lower the dignity of the present bureaus by making them the subordinate bureaus of a new bureau which would be offensive to every bureau so subordinated. To bring these bureaus under a department would not lower the dignity of a bureau thus coordinated with other bureaus under the department and would, I believe, generally meet the approval of the government officers employed in the bureaus so coordinated, giving them a new dignity by being a distinct branch of a department of public health, through which they could enlarge their efficiency and find better expression and publicity of work done for the public health." These considerations prompted Senator Owen to introduce this bill providing for a department and not for a bureau.

It is impossible to review every phase of Senator Owen's speech, the full text of which will be sent by him to any one on application. This movement and especially this enthusiastic propaganda on the part of a United States Senator is gratifying and encouraging to all those who have long sought to interest our national legislators in public health matters. If as a result a Department of Health is created, the visions of years will be realized. Even if this end, so much to be desired, cannot be secured, the campaign ought at least to insure a strong bureau of public health located in a department in which its work shall be untrammeled and not subordinated to other interests. Such a result will be a marked advance in the campaign for the protection of public health, and, even if it is not all that can be desired, will be well worth the effort.

THE FOURTH-OF-JULY SACRIFICE—MUST WE HAVE IT THIS YEAR?

Seven years ago THE JOURNAL, realizing the enormous sacrifice of human life in connection with our annual celebration of the Fourth of July, and believing that the public should be made accquainted with the actual figures, undertook to gather and publish accurate statistics regarding the matter. Every possible care has been taken each year in collecting these statistics, large numbers of individual cases being followed up, and sufficient time being allowed to elapse before final publication so as to include termination of the cases of lockjaw following Fourth-of-July wounds. For the first year or two the figures presented were apparently not appreciated but gradually they have been, and during the last two or three years they have been made the basis of a propaganda for a more sensible method of celebrating our national holiday. While the results of the propaganda have not been all that could be wished, it is most encouraging when cities like Baltimore, Cleveland and Washington have taken such a vigorous stand that last year they eliminated the fatalities and practically all of the casualties.

The outlook this year is promising. Never before has the subject been so widely and earnestly discussed in all classes of publications. The statistics have been utilized by the monthly magazines, and by various kinds of periodicals, including the newspapers. One magazine[1] this month devotes four pages to graphic illustrations of the horrors of the day as they have been observed in the past, and uses the statistics compiled by THE JOURNAL—although without credit—to show the gruesome results. Another magazine[2] calls attention to the "coming sacrifice" and says that "for scores of healthy happy boys and girls the days of life are nearly ended." It pictures startlingly the results of a vote by Congress, if that were possible, to sacrifice one unknown boy each year as a national Fourth-of-July offering—the extra editions of newspapers announcing this extraordinary action, the editorial denunciation of the law-makers, the public agitation and excitement, the petitions to Congress and the President, and the civil war that would surely follow an attempt to execute the decree. Such an attempted sacrifice, of course, is an impossible one, as the magazine says, but, if it could be seriously suggested for a moment, the pictured results would be true in every detail. All this would occur over the contemplated sacrifice of one unknown boy; and yet we supinely allow, year after year, the slaughter of hundreds, and the mutilation of thousands, causing desolation and anguish in many homes.

The public is becoming aroused on the subject. In every part of the country individuals, civic societies, and other organizations are taking up and vigorously agitating the matter, and one organization has taken steps for the formation of a national committee for the promotion of a "safe and sane Fourth." In cities, in which quickest and best results can be obtained, the authorities are taking action, and to those already having effective legislation many will be added this year. The medical profession, which comes in immediate contact with the results of the present custom of celebrating the holiday and realizes their frightful extent, should take the lead in agitating such measures as will speedily put an end to this needless sacrifice of life and limb.

1. The Ladies' Home Journal, April, 1910.
2. Popular Mechanics, March, 1910.

DEFENSE OF ANIMAL EXPERIMENTATION

Recently the *Ladies' Home Journal* has published two articles on animal experimentation, one by the Rev. Floyd W. Tomkins and the other by Dr. W. W. Keen.[1] Dr. Tomkins' article, while much more moderate in tone than the average "antivivisection" article, advocates restriction of scientific experimental work and regulation of it by men admittedly of unscientific training, in order to avoid the possibility of preventable cruelty. Like all the opponents of animal experimentation, Dr. Tomkins speaks entirely from hearsay and without personal or accurate knowledge of the facts involved. Dr. Keen, who, as the editor of the *Ladies' Home Journal* well says, is "as well, if not better, qualified to present the advantages of vivisection as any American writer," has spent a long, useful and honorable life in the active practice of surgery and of warfare against disease. When, therefore, he states facts which have come to him through his own experience as a surgeon, they are entitled to far more weight in the minds of all rational persons than the theorizing and hearsay arguments of those who would lock the doors of our laboratories and compel our scientific men to abandon their life-saving work.

Dr. Keen's first illustration is an exceedingly graphic one. In 1905 his assistant, a young man of brilliance and promise, was stricken with cerebrospinal meningitis and died in less than thirty-six hours, no relief being possible. In 1909 Charles E. Hughes, Jr., the son of the governor of New York, was seized a few weeks before graduation with the same dreadful disease. His death also would have been inevitable had not Drs. Flexner and Jobling, of the Rockefeller Institute, discovered in 1907, by researches on animals alone, a serum by which this disease could be cured. Three injections of the serum were given young Mr. Hughes, with the result that within a few weeks he was completely restored to health. In discovering this serum, Dr. Flexner experimented on twenty-five monkeys and one hundred guinea-pigs. Dr. Keen shows that this one discovery has reduced the mortality of cerebrospinal meningitis from 75 to 25 per cent., and then says: "Let me now put a plain, straightforward, common-sense question: Which was the more cruel: Dr. Flexner and his assistants who operated on twenty-five monkeys and one hundred guinea-pigs with the pure and holy purpose of finding an antidote to a deadly disease and with the result of saving hundreds, and, in the future, thousands on thousands of human lives; or the women who were 'fanned into fury' in their opposition to all experiments on living animals at the Rockefeller Institute, 'no matter how great the anticipated benefit.'?"

Dr. Keen gives other graphic illustrations of the results of animal experimentation, all proving that much of the present success in treating disease depends on investigations that have been made on animals. He also states that 97 per cent. of the animal experiments performed in England last year were merely hypodermic punctures, involving no pain whatever.

The article is calm and judicial, easily intelligible to the layman yet interesting and graphic throughout. It is not believable that any state legislature will pass an antivivisection law in the face of such testimony.

1. See also page 1104.

NEW CANCER RESEARCH LABORATORY

To overcome the ravages of cancer has become a fixed purpose with the medical profession, and the struggle has aroused the active interest of the general public. Endowments and other gifts for the study of cancer have reached a large sum. We recently[1] called attention to some of the large benefactions for this purpose. In this connection, an announcement made in the news columns of this issue is of especial interest. The St. Louis Skin and Cancer Hospital, one of the few institutions in the United States already doing good work along this line, is to establish and equip a research laboratory for the study of cancer. A new building is being erected, and from a liberal endowment, a large portion of which is already subscribed, a sum is annually to be appropriated exclusively for cancer research. Dr. Leo Loeb, formerly professor of experimental pathology in the University of Pennsylvania, is to be the director of the new laboratory, and under his guidance progress along scientific lines will undoubtedly be made. Although for a number of years the study of cancer seemed to make no progress, and the many theories as to its origin were one by one exploded or failed of confirmation, within the last few years definite progress seems to have been made, and this has given a new impetus to the study. The report, made at the last International Medical Congress, of the investigations carried on by the British Imperial Cancer Research Fund; reports from other sources in this country that cancerous tumors can be perpetuated in successive generations of animals even for years; the production of experimental tumors, some of them with all the characteristics of cancer, by means of the *x*-ray and by other means; the establishment of an apparent immunity by inoculation in animals—all these things indicate progress toward the final solution of this difficult problem. The multiplying of endowments and laboratories for the study of cancer is most gratifying and will hasten the time when conclusions of value can be drawn. St. Louis is to be congratulated on this new laboratory and the increased facilities for studying this vital problem; and much credit is due the founder of the hospital, the board of directors and the people of that city for their recognition of an important public duty.

Antagonistic Serotherapy.—Mariani suggests treating patients with myxedema with serum from patients with exophthalmic goiter, and *vice versa*. In the *Cronaca della Clinica Medica di Genova*, 1910, xvi, 65, he refers to the experiments of Colzi who united the carotid artery and jugular vein of a normal dog with those of another dog with thyreopriva tetany so that in a few minutes the blood of the two dogs was thoroughly mixed and the tetany subsided.

1. Cancer Research, THE JOURNAL A. M. A., Feb. 26, 1910, liv, 710.

Medical News

DISTRICT OF COLUMBIA

Personal.—Dr. John E. Walsh, sanitary inspector and bacteriologist of the health department of Washington, has resigned.——Dr. Tom A. Williams, Washington, has been elected foreign corresponding member of the Paris Neurologic Society.

Society Election.—The Medical Society of the District of Columbia, at its annual meeting, elected the following officers: Dr. Louis Mackall, president; Drs. D. Olin Leech and Philip S. Roy, vice-presidents; Dr. Dwight G. Smith, corresponding secretary; Dr. Henry C. Macatee, recording secretary; Dr Charles W. Franzoni, treasurer; Dr. Edwin L. Morgan, librarian, and Drs. D. Olin Leech, Henry B. Deale, Francis R. Hagner, John F. Moran and Raymond T. Holden, censors.

GEORGIA

Sanatorium Site Selected.—The City and County Subcommittee on the Tuberculosis Sanatorium site for Atlanta has decided on a piece of property, thirty-seven acres in extent, half a mile from the new city limits, high and well-drained, for which $7,000 is asked. The committee has already $20,000 in hand and can secure $10,000 more when it is desired.

State Medical Society Meeting.—The Medical Association of Georgia will hold its annual meeting in Athens, April 20-22. At the meeting of the council of the association, held in Cordele, March 10, Dr. Claude A. Smith, Atlanta, secretary-treasurer of the association, resigned on account of pressure of business, and Dr. Jarrett W. Palmer, Ailey, was elected to fill the unexpired term.

Personal.—At a called meeting of the Medical Examining Board of Georgia, held in Atlanta, March 9, Dr. Isham H. Goss, Athens, resigned as president of the board, and Dr. Francis M. Ridley, Lagrange, was elected for the unexpired term. Dr. Goss was elected to fill the unexpired term of Dr. Edwin R. Anthony, Griffin.——Drs. Bernard Wolff and Miller B. Hutchins have opened a sanitarium for the treatment of cancer in Atlanta.

ILLINOIS

Hospital News.—Dr. Paul E. N. Greeley has commenced the erection of a private hospital in Waterman.——An addition costing $25,000 will be made to St. Vincent's Hospital, Taylorville.

Building for Tuberculous Nurses.—The Illinois State Association of Graduate Nurses is endeavoring to raise $10,000 for the erection of a building to be used for the care of nurses attacked by tuberculosis.

County Sanatorium.—The board of supervisors of LaSalle county has recommended the remodeling of the present Isolation Hospital so that the building may be used as a county sanatorium for tuberculosis. A large porch is to be constructed around the building and proper provision made for open-air treatment.

County Retains Hospital.—At a meeting on March 23, of the Hospital Commission, consisting of representatives of Cook county and Chicago, it was decided that the county hospital is to be retained in charge of the county board. No more contagious diseases are to be treated in the institution and the city will build a hospital for contagious diseases.

Personal.—Dr. Glen W. Putnam, Grand Crossing, has succeeded Dr. I. W. Howard as surgeon of the Burlington Relief Association at Aurora.——Dr. Samuel M. Wylie, Paxton, has returned from Palm Beach, Fla., greatly improved in health. ——Dr. Eugen Cohn, assistant superintendent of the Anna State Hospital, has been appointed assistant superintendent of the Peoria State Hospital.

Gives Site to Hospital.—Mrs. Helen Morris, wife of Edward Morris, Chicago, has deeded the site of the Chicago Home for Convalescent Women and Children, valued at $10,000, to that institution. The gift makes possible the addition of a children's ward. The building at present on the site will be remodeled and a new four-story structure will be erected, doubling the capacity of the home.

INDIANA

Society Meeting.—The third annual meeting of the Fifth District Medical Society was held in Terre Haute, March 3. Dr. Orion E. Maddox, Rockville, was elected president; Dr. Daniel B. Miller, Terre Haute, vice-president; Dr. J. Randolph Gillus, Terre Haute, secretary, and Dr. Myron A. Boor, Terre Haute, treasurer.

Irregular Practitioners Found Guilty.—Colonel E. Wittey, Terre Haute, an advertising specialist, is said to have been fined $25 recently for practicing medicine without a license. ——C. O. Buis, a so-called "suggestive therapeutist," of Princeton, is said to have been found guilty of practicing medicine without a license, March 10, and fined $25 and costs.

Personal.—Dr. Thomas H. McCorkle, Black Hawk, formerly of Terre Haute, is reported to be critically ill in St. Anthony's Hospital in that city.——Dr. Henry A. Denison, Indianapolis, is reported to have been committed to the Central Hospital for the Insane.——Dr. James D. Hillis, health officer of Lafayette, is a patient in St. Elizabeth's Hospital on account of an injury to the eye, caused by a long hatpin.

Ask for Larger Hospital.—The Indianapolis Medical Society is to bring pressure to bear on the city council to secure better accommodation at the City Hospital. The resolution adopted called on the authorities to take up the question of hospital care without delay, and to give to the community and city a hospital commensurate with its needs, and with the modern conceptions of the proper care of the dependent sick.

New Hospital Opens.—The Indiana Steel Company formally opened its hospital at Gary, March 23. The hospital is admirably located, well built and thoroughly equipped, has accommodation for about 125 patients, and has cost the company about $2,000,000. A special train from Chicago carried a number of Chicago physicians and other invited guests to be present at the dedication. The hospital will take care of the injured from all the industrial plants of Gary. Dr. Ira Miltimore is in charge of the institution.

LOUISIANA

Leprosy Found.—It is reported from Estherwood that a case of leprosy has been found at Mermentau Cove in Acadia parish. There are said to be nine other cases in the cove.

Extra Protection Secured.—The efforts of the health officers of the state and New Orleans to secure for the city during the summer months extra protection has been successful. The supplemental local inspection by the United States Public Health and Marine-Hospital Service will be reestablished.

Milk Commission Planned.—A milk commission to work in conjunction with the New Orleans and Louisiana boards of health, in the interest of a pure milk supply is proposed by the state pure food commissioner, Dr. Hamilton P. Jones. The duties of the proposed commission will be to ascertain what dairies have attained the specific standard, to give such dairies certificates.

Elections.—At the annual meeting of Webster Parish Medical Society, held in Minden, March 15, the following officers were elected: President, Dr. John E. Rooks, Doyline; vice-president, Dr. Risdon W. Smith, Dubberly; secretary, Dr. Shelly F. Martin, Minden; and treasurer, Dr. Rutledge C. Tompkins, Minden.——Dr. Edward L. McGehee, New Orleans, organizer of the Louisiana Antituberculosis League, organized a branch society at Lafayette, March 11. Dr. Lambert O. Clark was elected president of the league and Dr. George A. Martin, vice-president.

Personal.—Dr. Isidore Cohn has been elected by the board of managers of the Touro Infirmary, New Orleans, outdoor physician to the poor, vice Dr. Jules Lazard, deceased.——Dr. Domingo Bornio, New Orleans, has been elected grand dictator of the Louisiana Grand Lodge of the Knights of Honor.——At a meeting of the Italian Mutual Benefit Societies and other organizations at Hotel Monte Leone, March 18, Dr. Joseph A. Danna, chief surgeon of the Charity Hospital, the guest of honor, was presented an oil painting of himself, and also with a handsome engrossed scroll containing expressions of regard and esteem.

Popular Medical Lectures.—An extensive course of lectures under the auspices of Tulane University, Medical Department, New Orleans, began March 16, and will continue until April 22. The list of subjects is as follows: March 16, Dr. Charles W. Duval on "Cancer;" March 23, Dr. G. Farrar Patten on "Recollections of Student Life in Germany;" March 30, Dr. George Dock on "Typhoid Fever;" April 6, Dr. Charles Chassaignac on "Sexual Continence and Prophylaxis;" April 12, Dr. Paul Michinard on "The Management of Labor;" April 13, Dr. Jacob A. Storck on "Hygiene of the Gastrointestinal Tract;" April 19, Dr. C. Jeff Miller on "The Anatomical Basis Underlying Injuries and Repair of the Pelvic Floor;" April 26, Irving Hardesty, Ph.D., on "The Anatomy of the Ear in Relation to Theories of Hearing;" and April 27, Dr. J. T. Hasley on "Physiologic Action of Some Much-Used Drugs, with Demonstrations."

MARYLAND

Protest Against Optometry Bill.—The Medical and Chirurgical Faculty of Maryland has made a protest against the optometry bill at present before the legislature, on the ground that it will license unskilled men to treat diseases of the eye.

Personal.—Dr. Thomas C. Bussey, Texas, was stricken with cerebral hemorrhage, March 19.——Dr. Ira Remsen, president of Johns Hopkins University, has been appointed a delegate from that institution to the centennial celebration of Berlin University, to be held next October.——Dr. Granville H. Richards, assistant superintendent of the University Hospital, Baltimore, has settled for practice at Fort Deposit.

Medical Association Meeting.—At the annual meeting of Howard County Medical Association, held in Ellicott City, March 19, the following officers were elected: President, Dr. Charles C. Tumbleson, Glenelg; vice-president, Dr. John M. B. Rogers, Ellicott City; secretary, Dr. Frank O. Miller, Ellicott City; delegate to the Medical and Chirurgical Faculty of Maryland, Dr. Arthur Williams, Elk Ridge, and censors, Drs. John M. B. Rogers, Bernard J. Byrne, and William B. Gambrill, all of Ellicott City.

Report of Sanatorium.—The biennial report of Eudowood Sanatorium shows that 89 per cent. of the cases were cured, arrested, or improved, and that no deaths had occurred. There were 337 patients treated, of whom 159 were discharged. The total expenditures for the biennium were $37,539, and the profits from the farm were $624. During the last two years there has been a deficit of $13,500, and the legislature is asked to appropriate $15,000, and a per capita allowance for maintenance on the same basis as is allowed for the state sanatorium.

State Appropriations.—Dr. Hugh H. Young, president, and Dr. Arthur P. Herring, secretary of the Lunacy Commission, point out that by the bond issue of $600,000 for the state care of the poor insane, the state will save $285,000 in 1911 and 1912, and also that the bond issue will add only one cent to the state tax and will be paid off in fifteen years. The general appropriation bill as agreed by the committees of the two houses of the legislature, leaves out the appropriation of $10,000 asked for by the Medical and Chirurgical Faculty of Maryland, and the appropriation of $4,000 a year asked for by each of the four medical colleges of Baltimore. Johns Hopkins University is given $25,000 a year.

Baltimore

Must Report Births.—An ordinance is being prepared by the health department of Baltimore providing a penalty for failure of physicians to report births. It is asserted that the registration of births in Baltimore is more incomplete than in any other civilized city in the world.

Money for Baltimore Hebrew Hospital.—Mr. Frank Cahn, New York City, has given $1,000 toward the maintenance of the Children's Summer Camp of the Hebrew Hospital, which was started last year.——By the will of Samuel Frank the Hebrew Hospital is bequeathed $500.

Tribute to Dr. Welch.—On the evening of April 2, several hundred distinguished representatives of medicine, science, literature and art, industry and statesmanship are to assemble at a dinner at the Belvidere, given in honor of Dr. William Henry Welch. This tribute is in recognition of the commanding position in the field of pathology occupied by Dr. Welch, of his work in original research for the diminution of human suffering and saving of human life, and of his election to the presidency of the American Medical Association.

MASSACHUSETTS

Fund for Children's Hospital.—The building fund for the Children's Hospital, Huntington avenue, Boston, now amounts to $245,050, of which Francis W. Hunnewell, Wellesley, has contributed $150,000. During 1909 1,303 patients were cared for in the wards of the institution, 25,895 outpatients were treated, and 1,951 visits were made by the outdoor department. The new buildings will accommodate 150 patients, doubling the present capacity of the institution.

Bequests.—Vincent Memorial Hospital and Emergency Hospital, Worcester, each receives $2,000 from the estate of Mrs. Sarah E. Foster.——By the will of Mary S. Spaulding, Groton, a bequest of $5,000 each is made to the New England Hospital for Women and Children, the Massachusetts General Hospital, Perkins Institution for the Blind, and the Boston Home for Incurables.——By the will of the late Freeborn F. Raymond, the Newton Cottage Hospital is bequeathed $5,000 to endow the Mary P. Raymond free bed.

Personal.—The summer home at Hamilton of Dr. Orran G. Cilley, Boston, was entirely destroyed by fire, March 26.——Dr. John A. Leitch, Andover, has been appointed town physician.——The Worcester Home of Consumptives Association, at its annual meeting, March 8, elected Dr. Carl Crisand, president, and voted to endorse the bill giving cities and towns the right to erect public sanatoria for the care of incurable cases of tuberculosis, and provide for the establishment of the sanatoria by a mill tax.——Dr. William J. Collins has resigned as chairman of the board of health of Northampton.——Dr. William N. Noyes has been elected city physician of Salem.——Dr. Joseph F. O'Shea has succeeded Dr. Frank E. Stone as city physician of Lynn.——Dr. Charles W. Page, superintendent, and Dr. Charles Rieksher, assistant superintendent, of the State Insane Hospital, Danvers, have resigned.——Dr. Maurice V. Tyrode, faculty instructor in pharmacology in Harvard Medical School, has resigned to take effect September 1.

MICHIGAN

County Sanatorium to Be Established.—The Houghton County Board of Supervisors adopted a resolution at its last meeting to submit to voters at the spring election the proposition to raise $15,000 for the erection and maintenance of a county sanatorium for tuberculosis.

The Health of Manistee.—Dr. Szymon Szudrawski, health officer of Manistee, in his annual report, states that during the past year 652 investigations were made, of which 163 were positive; 312 cases of infectious diseases were reported, and 269 disinfections were made, at a total cost to the city of only $224.17.

Lodge Practice.—At the recent meeting of the Oakland County Medical Society, held in Pontiac, an amendment to the constitution of the society was passed by a vote of 32 to 5, which stipulates that no member shall continue to do lodge practice and still continue to be a member of the society, unless he obtains for his compensation fees similar to those established by usage in the community in which he resides.

Sentenced to Prison.—Dr. George A. Fritch, Detroit, said to have been convicted of manslaughter in the case of Maybelle Millman, Ann Arbor, who died as the result of a criminal operation, was sentenced to imprisonment for an indeterminate term of seven and a half to fifteen years in the state penitentiary. The judge, in making the usual recommendation in indeterminate sentence law, recommended that the sentence of the prisoner be for fifteen years.

Personal.—Dr. Roy C. Perkins has succeeded Dr. Charles F. H. Freiberg as health officer of Bay City, and Dr. Harvey Gilbert has been placed in charge of the smallpox cases in the city.——Dr. Mina L. Fuller, physician of the State Industrial Home for Girls, Adrian, since 1891, has resigned, and Dr. Emily S. Stark, Detroit, has been chosen her successor.——Dr. Oscar C. Breitenbach has been appointed Escanaba representative of the State Board of Health on the regulation of the public water supply.——Dr. Flemming Carrow, Detroit, for eighteen years a member of the faculty of the University of Michigan, and a member of the State Board of Registration in Medicine, has decided to give up practice and has purchased a farm in the state of Washington.

MINNESOTA

Abortionist Sentenced to Jail.—Mrs. Elizabeth Schmitz, a midwife of St. Paul, who pleaded guilty March 14, to the charge of criminal abortion, has been sentenced to imprisonment for one year in the county jail.

Public Safety Commission Proposed.—Dr. Henry M. Bracken, secretary of the State Board of Health, has suggested a commission on public safety as one of the future possibilities of the state. His idea is to have a commission composed of three men, which will be in continuous session, and who will do the work now done by the Bureau of Labor, the Health Department, and the Dairy and Food Commission.

Personal.—Dr. John Jackola, Duluth, has returned after a years' stay in Berlin.——Dr. William D. Kelly, St. Paul, has been appointed chief surgeon of the Chicago, Milwaukee and St. Paul Railroad for Minnesota, Iowa and Wisconsin.——Dr. Albert F. Groves, Brainerd, who has been seriously ill with rheumatism, is reported to be improving.——Drs. Arthur S. Adams, Rochester, Charles E. Fawcett, Stewartville, Frederick L. Smith, Chatfield, Rolla C. Dugan, Eyota, and George Steven, Byron, have been appointed by the county commissioners of Olmstead county, physicians for the districts in which they are located.

MISSOURI

St. Louis

New Building for Hospital.—The St. Louis Skin and Cancer Hospital, which has been in operation in an old hospital building since its inception in 1906, will in the early summer occupy its new four-story hospital building, with largely increased facilities for the study and treatment of cancer and skin diseases. The hospital is wholly charitable, no private or pay patients being admitted. The funds for the erection of this new structure were furnished by Mr. George D. Barnard of St. Louis, the founder of the hospital, for whom the institution is to be named. It will be complete and modern in every detail, and specially constructed for the study of skin and cancer diseases. The Board of Directors has lately appropriated the sum of $8,000 annually for the department of cancer research, and has secured the services of Prof. Leo Loeb of the University of Pennsylvania, as director of research. The fourth floor of the institution has been reserved for the exclusive use of the research laboratory, and is to be fitted with all the apparatus necessary to prosecute the work along scientific lines. The directors are at present raising an endowment fund of sufficient magnitude to perpetuate the usefulness of the institution; so far they have met with gratifying success and hope in a short time to have sufficient means to put the institution on an adequate financial basis. The report of 1909 has not as yet been compiled, but that of 1908 shows an abundance and variety of clinical material for the prosecution of this special work.

NEW YORK

Medical Examination.—On April 23, the State Civil Service Commission, Albany, will hold an examination for medical superintendent of Letchworth Village, $4,500 with maintenance for superintendent and family. Applications should be filed before April 16.

Vital Statistics for January.—There were 12,866 deaths in the state during January, as compared with 11,481 in January, 1909. Influenza had an increased prevalence and fatality. Measles continued to be extremely epidemic. With an average daily mortality of 415, the death rate was 17.8 per 1,000. The birth rate for the month was 23.2 per thousand population.

Medical Society Elections.—At the annual meeting of Utica Medical Club, March 17, the folowing officers were elected: Dr. John Gormann, president; Dr. Arthur M. Johnston, vice-president; Dr. Frederick R. Ford, secretary-treasurer, and Drs. Morris J. Davies, William J. Schuyler, and William B. Roemer, trustees.——Preliminary steps were taken March 16, for the organization of a new medical society at Canandaigua, to be known as the Canandaigua Medical Association. Dr. Frank A. Brockmyre was temporary chairman and Dr. George W. Gregg, temporary secretary of the meeting.

New York City

Gift to Medical School.—Mrs. Helen Hartley Jenkins has given $100,000 for the endowment of the Marcellus Hartley Chair of Medicine in the New York University and Bellevue Hospital Medical College.

New Courses in Medicine at Columbia University.—During the summer of 1910 a new course in clinical pathology, bacteriology, physiologic chemistry, nutrition, and physical and medical diagnosis, will be instituted.

The Harvey Society.—The eighth lecture of the Harvey Society will be delivered by Professor Magnus-Levy of the University of Berlin at the Academy of Medicine, New York, on April 9 (not on April 2 as previously announced), at 8:30 p. m. The subject of the lecture will be "Pathology and Therapy in Diseases of Metabolism."

Cartwright Lectures.—Professor Magnus-Levy of the University of Berlin will deliver the three Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons of Columbia University at the New York Academy of Medicine, 17 West Forty-third street, on April 11, 12, and 13, at 5 o'clock. The subject of the lectures will be "Some Phases of the Chemistry of Diabetes."

Personal.—Dr. A. O. Shaklee, assistant in physiology and pharmacology in the Rockefeller Institute for Medical Research, has been appointed assistant professor of pharmacology in the Philippine Medical School, Manila.——Dr. Nell G. W. Bartram has been appointed a member of the staff of Kings Park State Hospital.——Dr. and Mrs. Simon Flexner and Dr. J. Morgan Howe have sailed for Bermuda.

Closer Relations Between College and Hospitals.—Closer relations are being established between the College of Physicians and Surgeons and Mount Sinai Hospital and the German Hospital. Drs. Nathan E. Brill, Emanuel Libman, Arpad G. Gerster and Henry W. Berg, of the staff of Mount Sinai Hospital, and Drs. Frederic Kammerer, Norbert Stadtmuller, and Otto Hensel, of the staff of the German Hospital, have received appointments in Columbia University.

Fellowship in Pathology.—Mount Sinai Hospital announces the establishment of a second fellowship in pathology to be known as the Eugene Meyer, Jr., Fellowship. The income of the fellowship, like that of the first, established in 1908, is $500 per annum. It is open to all graduates in medicine, and the term of appointment is for one year with renewal at the option of the committee, composed of Drs. Abraham Jacobi, Arpad G. Gerster, Frederick S. Mandlebaum, and Emanuel Libman. The object of the fellowship is the furtherance of scientific work of the hospital and to aid students to obtain laboratory training. The work may be done either in Mount Sinai Hospital or elsewhere, under the direction of the pathologist of the hospital.

Buffalo

Personal.—Dr. Charles F. Howard has been appointed chief of the medical staff of Providence Retreat, vice Dr. William C. Krauss, deceased.——Dr. John H. Pryor has been elected president of the board of trustees of the J. N. Adam Memorial Hospital.

Alumni Election.—At the annual meeting of the Buffalo General Hospital Alumni Association, held in Buffalo, Dr. Ernest L. Shurly, Detroit, Mich., was toastmaster. Dr. James W. Putnam was elected president; Dr. Frederick C. Busch, Buffalo, vice-president, and Dr. Thew Wright, secretary-treasurer.

Free Dispensary Established.—The Board of Health has decided to establish and maintain a free dispensary at the city hall, and has appointed Dr. Walter H. Vosburg, and Messrs. Frank E. Murphy and John T. Kornprobst as a commission to provide the necessary quarters, hire trained nurses, and furnish the equipment.

Gift for Nurses' Home and Contagious Pavilion.—Mrs. William Hamlin has bought the property adjoining the Children's Hospital on the west and has intimated that she will present the site to the management with the distinct stipulation that the money needed is raised for the new home. The new contagious pavilion for the hospital will cost about $30,000, of which $12,000 has already been subscribed.

PENNSYLVANIA

Personal.—Dr. Michael Austin, Josephine, has been appointed chief surgeon for the Lackawanna Coke Company at Wehrum, to take effect April 1.——Dr. Louis Jurist, Philadelphia, who has been seriously ill with pneumonia, is convalescent.——Dr. Florence H. Richards, Philadelphia, has been apponted medical director and teacher of physiologic hygiene in the William Penn High School for Girls.

Site for Tuberculosis Camp Acquired.—The state commissioner of health announced March 24 that he had purchased for $18,305, 311 acres of land near Hamburg, Berks county, for the state, on which the department of health will establish its proposed Eastern State Sanatorium for Tuberculosis. The site is in the foothills of the Blue Mountains, a mile from Hamburg, is very picturesque and is admirably adapted for the use to which it is to be placed.

Care for State's Defective Children.—A successful movement has been inaugurated by the Pyschologic Clinic of the University of Pennsylvania to extend throughout the state its work in the treatment of backward and defective children. The officials of the clinic recently offered their services to any community wishing to make studies in retardation and to gain knowledge of a proper treatment for defectives. Already more than 100 children have been examined by Dr. Leightner Witmer and his associates, who have visited Susquehanna, Media, Williamsport and other towns. It is said that several other school boards have arranged to utilize the services of the clinic.

Philadelphia

New Motor Ambulance.—On March 23, Dr. Joseph S. Neff, Director of Health and Charities, received the third motor ambulance for the use of the Municipal Hospital.

Hospital Pavilion Completed.—The new pavilion of the women's section of the Insane Department of the Philadelphia General Hospital has been completed and will be occupied in a few days. The new building will accommodate about 60 patients.

Railroad to Abolish Public Drinking Cup.—The officers of the Pennsylvania Railroad are endeavoring to perfect plans to abolish the public drinking cup from all waiting rooms in their stations and from all railroad coaches. A plan for individual drinking cups is being developed and will be tried.

Bequests.—The will of the late Henry C. Fox bequeathes $5,000 to the Presbyterian Hospital, $5,000 to the Howard Hospital and Infirmary for Incurables, and $5,000 to the German Hospital.——From the estate of the late Charles E. Etting, valued at $150,000, the sum of $10,000 is set aside to endow two perpetual free beds in the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases.——The will of the late Emma M. Shive bequeathes $500 each to the Methodist Hospital and the Philadelphia Home for Incurables.——By the will of the late Anna D. Evans, a bequest of $5,000 is made to the Germantown Hospital and Dispensary for the purpose of endowing a free bed, to be known as the "Thomas Wallis Evans and Anna D. Evans Memorial Bed."

April Housecleaning.—Dr. Joseph S. Neff, of the Department of Health and Charities, advocates calling on all members of the community to engage in a thorough housecleaning the first week in April. The street cleaning contractors will also be called on to aid in the city-wide movement for greater cleanliness as a preventive against the spread of disease. The fact that the death rate has run up this winter to 20 per 1,000, as compared with about 18 last winter and an average rate of 16 for the entire 12 months of 1909, has led to this decision. Among the causes for the increase are believed to be the severity and changeableness of the weather and the labor troubles. As so many men were out of work, it was difficult for their families to obtain proper food. One reason for the general housecleaning the first of April is the prevention of breeding of flies. This is the time to prevent their breeding and absolute cleanliness will go far toward reducing their numbers.

GENERAL NEWS AND COMMENT

Bubonic Plague in Hawaii.—Rear Admiral Cowan P. Rees, commandant of the Naval Station at Honolulu, cabled the naval department, March 19, that two deaths from plague had occurred on the Island of Honokaa and three on the Island of Hilo.

New Medical Association.—A medical association has been organized by the practitioners in the district between Warroad, Minn., and Fort Francis, Ont., and the following officers have been elected: President, Dr. Frank H. Stuart, Baudette, Minn.; vice-president, Dr. Alexander A. McCrimmon, Rainy River, Ont.; and secretary-treasurer, Dr. Dugald McBane, Rainy River.

Naval Medical School Graduation.—The closing exercises of the United States Naval Medical School, Washington, for 1910, were held March 24. Among the features of the program were an address and presentation of degrees by Secretary Meyer, and addresses by Dr. Edward Quintard, New York City, and by Surgeon General Charles F. Stokes. A class of twenty passed the final examination.

Sixth International Congress of Esperantists.—This congress will meet next August at Washington, D. C. Dr. Zamenhof, the founder of Esperanto, and a prominent oculist of Warsaw, Poland, will attend. The American members of the World Esperanto Medical Society will doubtless be present in force, as an effort will be made to organize an American branch of the society. Further particulars may be obtained from Dr. Kenneth W. Millican, 231 Metropolitan Building, St. Louis.

Panama Sanitation Reports Again Published.—In THE JOURNAL, Dec. 11, 1909, we commented on the fact that the monthly publication and distribution of the Reports of the Department of Sanitation of the Isthmian Canal Commission were eagerly looked for and carefully read by sanitarians all over the country and that their discontinuance in March, 1909, was unfortunate. We have now to announce that the reports are again being issued and that the back numbers from April to December, 1909, have been published and are available for reference, and may be obtained from the government printer. As we stated before, these reports are of importance not only in regard to canal sanitation but in regard to the management of diseases in the tropics generally.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, March 19, 1910.

Death from Fright: Curious Charge in a Case of Murder

A curious case of murder has just been tried in which the theory put forward by the prosecution was that the victim died from fright when she discovered that her son was attempting to poison her. An old woman, aged 75, was living alone in Coventry. She had a son who was a great trouble to her and to whom she lent money from time to time. Shortly before Christmas, he went about saying that his mother was very ill and would not live over Christmas, though she was in her usual health and was going about her duties. About this time he purchased some cyanid of potassium, saying that he wanted it for hardening tools. He alleged that he used it on a chisel, but the evidence showed that the chisel had not been so treated. He left the cyanid at his mother's house where there could have been no lawful use for it. He told people from whom he had borrowed money that he would have plenty after her death. On Christmas eve, the woman was found very unwell and drowsy and the prisoner admitted that he had given her laudanum "to do her good." He promised to call a physician and ostensibly went to do so but none came. On January 9 the woman was found lying dead on a sofa. In front of her was a glass which had contained cyanid of potassium. When shown the glass the prisoner remarked, "I know what is in it; it is cyanid of potassium." Asked how it came there, he replied, "How should I know?" He was arrested on the charge of poisoning and then the curious fact arose: the necropsy revealed no cause for death. The organs were healthy and no trace of the cyanid could be found in the body. The amount of cyanid in the glass was so small that in the opinion of the analyst it was not sufficient to cause death. The latter said in his evidence that the absence of all signs was not inconsistent with cyanid poisoning. Cyanid of potassium in the stomach would be converted into hydrocyanic acid, which is very volatile. He was of opinion, however, that death was most probably due to fright or some other external cause. It was suggested that the old woman died from fright when the glass containing the cyanid was presented to her by her son. In this case, he would be as guilty of murder as if she died from taking it. By order of the judge, a solution similar to that found in the glass was prepared and he and the jury smelt and tasted it. The defense was that the whole case rested on suspicion and that the woman died from syncope. The jury found the prisoner guilty of attempted murder. The judge passed the heaviest sentence possible for this crime, penal servitude for life.

Expedition to Study the Effects of High Altitudes

An international expedition for the investigation of the effect of high altitudes on medical and biologic processes has left England for the Peak of Teneriffe. The members are Professor Pannwitz of Charlottenburg, the president of the "International Commission for the Study of Biological and Medical Effects of High Altitudes and Sunshine;" Dr. Bancroft and Dr. Douglas, representing England; Professor Zuntz and Dr. Neuberg, representing Germany; Dr. Mascat and Dr. Plasse, representing France; and Professor Durig and Dr. H. von Schrötter, representing Austria. The primary object of the expedition is to continue the observations started by Professor Zuntz and his collaborators on Monte Rosa. At the same time the members will endeavor to extend the knowledge recently acquired of heliotherapy.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, March 10, 1910.

Personal

Like Professor Olshausen, Professor Senator will resign his position at the end of the summer semester. Senator was 75 a short time ago.

New German Mortality Tables

The official German mortality tables based on statistics of the decade from 1891 to 1900 have just been published. The new tables are intended to replace the German mortality tables published in 1887, which were computed on the mortality for the years 1871 to 1881. The new tables give a view of the changes in the death rate in the last thirty years. The average length of life of the male sex was calculated for 1870 as 35.8; for 1890, 40.56. For the female sex the corresponding figures are: 38.45 and 43.97. The expectation of life for the male sex has risen from 38.1 to 48.85, for the female sex from 42.5 to 54.9. This shows a quite important improvement in the life expectancy of the German people.

Professional Courtesy in Regard to Fees

It is an ancient custom in Germany as in many other civilized countries that physicians receive no fee for their treatment of their colleagues and their families. This tradition, founded on an ideal of professional conduct, has led in the course of time to abuses which are much complained of, both by the colleagues treated and by those called on to treat them. In a signed editorial in the *Deutsche medizinische Wochenschrift* last October, Professor Schwalbe discussed these abuses

thoroughly. (A summary of his article was published in THE JOURNAL, Nov. 20, page 1785.) He came to the conclusion that the conditions of practice have changed so much that a mutual remission of fees to the medical profession is no longer to be regarded as desirable from a professional standpoint. The treatment of the families of physicians forms at the present time a great part of the work of specialists, who formerly were almost unknown, and those among them who are of moderate means cannot afford to receive for their practice either nothing at all or more or less useless presents like bronzes, vases, pictures, etc. On the other hand, the distinguished physicians whose income might well permit such free treatment are so greatly in demand by German and foreign physicians and their families that their other practice suffers. On the other hand, a considerable number of physicians who require the aid of their colleagues for themselves and their families object to the present custom, for one reason because they are not willing to remain under obligations to physicians to whom they are more or less strangers, and as the consultants are averse to receiving pay on account of professional custom, they hesitate to demand their services and often in this way diseases are neglected. Professor Schwalbe proposed that each physician shall be allowed to decide whether he will demand or pay a fee for the services and that a consultant shall no longer be required on the ground of professional courtesy to refuse to receive a fee offered by a colleague. This position has been endorsed by a number of physicians in letters that have been published in the *Deutsche medizinische Wochenschrift*. What is still more important, the business committee of the Berlin medical professional union (*Standesverein*) which includes the greater part of the Berlin medical profession, a few days ago, after a thorough debate, passed the following resolution: "The acceptance of a fee for the treatment of physicians and physicians' families is not to be considered unethical conduct." Thus the present usage will be gradually abandoned to the benefit of many patients and physicians. In practice the ideal which Professor Schwalbe gave at the end of his article may be established: Physicians who are in friendly relations or closely associated in their work will not mutually recompense each other for treatment by money payment, but the specialist will be justified in requiring a fee from distant, unknown, or foreign physicians and their families. On the other hand, every physician will be permitted to pay the adviser for himself and family in a moderate way, and the consultant need not feel himself obliged on account of professional courtesy to refuse the fee. If the latter regards it unprofessional to use such a fee for himself, he may apply it to some humanitarian purpose. In the estimation of the fee it is to be expected of specialists that they will not require the fancy prices occasionally customary with many of them but at most will settle for a moderate fee.

Infant Mortality in Bavaria

The infant mortality in the kingdom of Bavaria has fallen markedly and somewhat steadily in the last six years; in the years from 1903 to 1908 the deaths of children in the first year corresponding to a percentage of those born living, were respectively 25.0, 23.9, 24.1, 22.7, 22.0 and 21.7. In 1900 the infant mortality was 27.8 and in 1878 29.6 per cent. In 1908 two-thirds died from gastrointestinal catarrh and diarrhea or congenital lack of vitality, 36.8 per cent. from the first cause, and 26.8 per cent. from the second. The infant mortality is extraordinarily high only in certain districts where the custom of artificial feeding of new-born children prevails. The coincidence of a high infant mortality with a high birth rate, noted in Bavaria as elsewhere, is associated with the marked extension of artificial feeding for the reason that the mother who nurses her child does not again become pregnant so soon, and that when the deliveries follow each other so rapidly, the new pregnancy gives the mother no time to recover from the exhaustion of the last delivery. The prince regent of Bavaria has contributed $2,500 (7,000 marks) and the government $12,000 for the advancement of infant hygiene.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, March 12, 1910.

Increase of Smoking and Its Effects on Youths

Two reports giving an interesting insight into the effects of tobacco on the population have been recently published.

The financial report of the budget committee of parliament shows that a constant and rapid diminution of the use of cigars is balanced by an equally constant and rapid increase in the consumption of cigarettes. Pipe-smoking and snuffing are nearly 80 per cent. less than five years ago, while tobacco-chewing is practically unknown here. There were 1,212,060,000 cigars sold in this country in 1908, while 4,348,010,000 cigarettes were consumed at the same time. The population being about 28,000,000, of whom only 9,000,000 can be considered as smokers, this works out a high figure per head.

The other report was made by a medical officer engaged for ten years in recruiting work, who for his private curiosity undertook to observe the effects of smoking on the youths whom he had to examine for the army. His list comprises 4,800 youths, aged from 19 to 24. He finds that in rural districts smoking is much less common, at this age at least. Even then pipes are preferred; smoking is done mostly in the open air. In the town population the cigarette is mostly indulged in, oftener indoors than out in the open; the average age at the beginning of smoking, 17, is about equal in the two groups. Youths in schools (colleges, gymnasiums, universities) are nearly always smokers; at least they pretend to be. Only 5 per cent. of the masculine population of this age are non-smokers. Generally speaking, he could not find any marked effects due to moderate smoking among those whom he examined. Only excessive smoking, especially seen in students before examinations during hard study, brought on neurasthenic symptoms: palpitation, indigestion, sleeplessness, tinnitus aurium. He hardly ever saw such conditions in youths engaged in rural occupations, while apprentices and shop assistants showed similar conditions as those seen in students.

Postgraduate Lectures During Vacations

For a few years postgraduate courses have been organized here with much success. Although they were at first only a private experiment their use has been recognized so universally that they have now become a regular part of the teaching at our general hospital. In order to enable all doctors who desire it to partake of the advantages of the classes, it has been arranged by the Vienna medical council that classes of six to twelve hours, lasting one or two weeks, are given by certain professors alternating every month. The fee is very moderate, $1 or $2 per class, which goes to medical charitable purposes. The subjects of the postgraduate classes of this kind are chosen with a view to inform the doctor who is out of touch with the hospitals about the achievements of modern medicine during the last fifteen years or less. Another group of lectures, called the *Ferialcurse* or vacation course, is delivered during the Easter, Christmas and summer months, lasts at least four weeks and comprises one subject, which is taught as intensively as possible. The fees are much higher, $10 to $20; the classes are held mostly by privat-docents or assistants, and the number of the students is limited. They are open to any qualified man, while the classes conducted by the medical council are open only to Austrian doctors. The number of physicians who made use of the opportunities offered them by the medical council was over 400 last year, and the usefulness is best demonstrated by the number of those who have booked for similar courses for this year.

The Temperance Movement in Austria

The temperance movement is growing in this country steadily, though not too rapidly. The energetic managing board of the "Austrian Antialcohol League" has succeeded in turning public attention to its aims by inducing several well-known men, among them the celebrated Professor Forel from Switzerland, to deliver popular lectures on the subject of the evil influence of alcohol on the development of both the body and the mind.

Already it has been demonstrated that temperance exerts a powerful influence on the capability of the laborer, and in many factories and trades only persons are employed who belong to the abstainers or at least to temperance clubs. There is a medical club of total abstainers. Students of all faculties have formed the students' antialcohol club (a fact much more significant than anything else, for the old unwritten laws and customs of the German students made drinking one of the chief recreations of the university men). In several hospitals a non-alcoholic treatment of diseases has been strictly adhered to, and there is an antialcohol press, whose circulation has exceeded that of many of the political papers.

Among the working classes the knowledge of alcohol, of its questionable value as a food, and its unquestionable effects as disease-producer is widely disseminated by lectures, so that in many circles a true alcoholic boycott is permanently declared and observed by the men.

Pharmacology

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION.]

THE ESTIMATION OF MERCURY IN ORGANIC COMPOUNDS

W. A. Puckner and W. S. Hilpert

[EDITOR'S NOTE: The preparation here referred to, in an indefinite way, was finally accepted by the Council and is now included in New and Nonofficial Remedies, but with a corrected statement as to its actual composition. The matter is published to call attention to one phase of the work of the Council on Pharmacy and Chemistry. In this instance an honorable firm had for a long time been putting out a preparation which the physician was told contained a certain amount of mercury. It matters not whether the manufacturers were innocent or not, the fact was that it did not contain the amount stated, and the physician would therefore be misled on a very important matter. This report also shows another thing, and that is that honest manufacturers are realizing that it is to their interest to comply with all legitimate demands regarding statements, whether they relate to the actual composition of a product or to its therapeutic value.]

Under a proprietary name there has been on the market for some time a preparation containing a protein compound of mercury, combined with other material. The preparation was submitted to the Council on Pharmacy and Chemistry and the manufacturers gave a chemical formula for the protein compound of mercury which indicated that the mixture should contain 6.57 per cent. of mercury.

At the request of the Council, the preparation was examined in the Association laboratory. The identity of the contents of the mixture was verified by qualitative tests, but a quantitative examination showed that the preparation instead of containing 6.57 per cent. of mercury really contained only 4.27 per cent. The method of examination was that of Kjeldahl. The material was decomposed by sulphuric and nitric acids and the mercury determined as sulphid.[1]

The attention of the manufacturers was called to the result of the examination and they were also given the method used. In reply they questioned the findings and held that the method used was faulty, and proposed a method which differs from the one used in the Association laboratory only in that potassium sulphate was added to the sulphuric acid in place of nitric acid. This method was then employed with the result that in two analyses the mercury compound yielded mercuric sulphid equivalent to 4.40 per cent. of mercury. This showed such a slight increase in the mercury content indicated by the first examination as to be negligible.

As a further check on the method determinations[1] were made according to the method of Schumm in which the organic matter is decomposed by the action of concentrated hydrochloric acid and potassium chlorate and the mercury estimated as sulphid, with the result that the compound yielded mercuric sulphid equivalent to 4.23 per cent. of mercury. Confirmation of the laboratory's findings by their own method having been reported to the manufacturers, they were accepted by them as correct.

The discrepancy between the claims made for a product and the facts established by analysis which were brought out by the examination detailed above furnishes a good illustration of the lack of control exercised in the manufacture of medicinal products and the loose manner in which chemical formulas are applied to substances which are of indefinite, variable composition or which are highly impure. This can be explained in this instance by a lack of cooperation between the scientific staff of the manufacturers and those in charge of the commercial department.

There is no reason for the assumption that the manufacturers knowingly misrepresented the composition of the preparation. On the contrary, they have courted investigation of their products. Thus, when they submitted to the Council the preparation referred to, they voluntarily presented specimens of the constituents so as to facilitate investigation.

1. The details of analysis will be published in the annual report of the laboratory.

The Composition of Manola

Inquiries have been received relative to the composition of Manola, a preparation manufactured by the "Manola Company," said to be a subsidiary concern of the Luyties Homeopathic Pharmacy Company, St. Louis.

Examination of Manola in the Association laboratory indicates that its composition is consistent with its origin, for its medicinal ingredients are present in truly homeopathic quantities. The laboratory report follows:

An examination of an original bottle of Manola gave the following results:

Specific gravity at 25 C.	1.0329
Alcohol	18.00 per cent. by vol.
Non-volatile matter (residue on evaporation)	15.93 gm. in 100 c.c.
Ash	.96 gm. in 100 c.c.
Phosphoric pentoxid (P_2O_5)	.0668 gm. in 100 c.c.
Total alkaloids	.0047 gm. in 100 c.c.
Calcium	Traces.
Magnesium	Traces.
Iron	Traces.
Sodium	Traces.
Arsenic	Traces.

Manola is a light amber colored liquid having the odor and taste of sherry wine. The above analysis indicates that it is nothing more than wine, fortified with alcohol and a slight amount of medicinal substances added. The non-volatile matter appears to be nearly all sugar, glycerin, or some similar substance and the presence of less than one gram of ash to 100 c.c. excludes the presence of more than a small amount of organic salts. From the amount of phosphorus found there appears to be about one dose of phosphoric acid to a twenty-ounce bottle. Arsenic is present in such small amounts that the ordinary hydrogen sulphid test failed to show its presence and the delicate Gutzeit's test had to be used to detect it.

Some interesting points in regard to the methods of the exploiters of Manola appeared in THE JOURNAL, Aug. 8, 1908, p. 511; Dec. 19, 1908, p. 2172, and have been reprinted in the "Propaganda for Reform."

Correspondence

Views on the Present Organization by the "Father of the Association"

To the Editor:—I have been reading your editorials on the organization of the Association with great interest and satisfaction. I am sure if you will search old speeches made by my father, by Gross, and by others of the old guard, you will find the hope frequently expressed that ultimately the profession of the country would be so organized that every county would have its society and send delegates to a business body of the state society, and that every state society would, in like manner, be represented in the Association—in other words, the organization as it now exists. That this was my father's ideal I know from his frequently repeated expressions to that effect.

Moreover, what may please you was his feeling of gratification when the reorganization was effected that such a representative organization was possible. He also commented on the similarities of function of the council and the business committee, or business council as his committee planned it for adoption, a reform which was adopted and later tabled on a parliamentary technicality, as is stated in your editorial.

N. S. DAVIS, Chicago.

[Dr. Davis merely emphasizes what the records of the Association show and what the older, active members of the Association know—that the general plan of organization, as is now in active operation, was the ideal that for long had been suggested, and especially by Dr. Davis, the "Father of the Association." This is shown in the "argument" accompanying the report of the Organization Committee, presented to the St. Paul meeting in 1901.—ED.]

Arrest of Paroxysms in Whooping Cough

To the Editor:—The following simple method has arrested the paroxysms of whooping-cough in a number of patients in from 3 to 7 days, and has also succeeded in some cases of laryngismus stridulus.

Place a pleximeter on the spinous process of the seventh cervical vertebra and strike the pleximeter a series of moderate blows with a percussion hammer. The number of blows is of little moment but the blows must be as strong as the child can tolerate without flinching. Some of the mothers accompany the blows with a nursery rhyme or song to interest the child. In the absence of a pleximeter and percussion hammer, a strip of linoleum and a tack hammer will suffice. To avoid cutaneous irritation, cotton may be interposed between the linoleum, or pleximeter and the spine. Each seance during the interparoxysmal period should last five minutes thrice daily and the harmless method may be executed by the mother or nurse. I am desirous of collecting reports on this method of treatment; to test the efficiency of the treatment, it would be well to note the number and severity of the paroxysms before and after treatment in each patient.

ALBERT ABRAMS, M.D., San Francisco.

246 Powell Street.

The Kentucky Medical Bill

To the Editor:—In THE JOURNAL, March 19, an item from your Kentucky correspondent is misleading in that it states that the cause of the failure of the bill was the statement made by Senator Linn in opposition to the bill that "the consolidation of the five medical colleges of Louisville resulted in a number of men losing their positions and this bill was the outcome of the ill-feeling resulting therefrom."

Senator Linn was the political leader of the senate, and was simply following the dictates of the powerful influence brought to bear on him by the so-called University of Louisville, which has fought higher medical education all the time.

This bill was the result of a petition endorsed unanimously last October by the State Medical Association urging the state to establish a medical department of the State University as a necessity for higher and better medical education. It was drawn by President Patterson and his associates of the state university at Lexington. It was a bill that should have passed, and will pass unquestionably at the next legislature.

The bill was not defeated by a vote of eighteen to fourteen, as stated by your correspondent, but it was defeated, after receiving eighteen to fourteen votes in its favor, by a constitutional amendment requiring all bills carrying an appropriation to have twenty votes, of which we lacked two owing to sickness on that day of two of our champions for the bill in the senate. W. F. BOGGESS, Louisville, Ky.

[We have received two other protests similar to the above. The item referred to and quoted should not have appeared in THE JOURNAL, regardless of whether or not the assertion of Senator Linn was based on fact.—EDITOR.]

Association News

TRUSTEES' MEETING

Report of Regular Meeting of the Board of Trustees of the Association

The Trustees of the American Medical Association met in Chicago, Feb. 4 and 5, 1910, at the rooms of the Association. Two sessions were held on February 4 and one on February 5. There were present at all sessions:

Dr. M. L. Harris, Chicago (Chairman).
Dr. Philip Marvel, Atlantic City, N. J. (Vice-Chairman).
Dr. Wisner R. Townsend, New York (Secretary).
Dr. Philip Mills Jones, San Francisco.
Dr. W. T. Councilman, Boston.
Dr. W. T. Sarles, Sparta, Wis.
Dr. C. E. Cantrell, Greenville, Texas.
Dr. C. A. Daugherty, South Bend, Ind.

FIRST SESSION, HELD FROM 10:15 A. M. TO 12:30 P. M.

A letter from Dr. W. W. Grant, Denver, was read, in which he stated that he was unable to be present and expressed his regret.

It was moved to dispense with the reading of the minutes of the last meeting, as they had been read and approved.

The Editor and General Manager read his annual report. The recommendations contained therein, for new machinery, were duly considered.

Dr. Sarles moved, Dr. Cantrell seconded, that a new covering machine to cost $3,500 be ordered. Carried.

Dr. Jones moved, Dr. Cantrell seconded, that a new rotary press to cost $18,000 be ordered. Carried.

Dr. Jones moved, Dr. Sarles seconded, that a new book sewing machine to cost $1,350 be ordered. Carried.

A request from Dr. W. B. Cannon was read, asking for an additional appropriation of $500 for the Committee on the Defense of Medical Research.

A request was also presented for an appropriation of $850 for the Council on Pharmacy and Chemistry.

Dr. Charles A. L. Reed presented a request for an additional appropriation for the use of the Committee on Medical Legislation, and made an argument in favor of the same, giving details as to what had been done so far toward the establishment of a bureau of health and what work was necessary in the future. Dr. Cantrell moved, Dr. Marvel seconded, that the request of Dr. Reed for an additional appropriation of $1,250 for the expenses of the Committee on Medical Legislation, from February 7 to June 12, be allowed, and an additional contingent fund of $2,000 be placed at the disposal of the committee, with the proviso that it can only be spent for work done by the committee itself. Carried.

SECOND SESSION, HELD FROM 2:30 P. M. TO 6 P. M.

The minutes of the morning meeting were approved.

Dr. Jones moved, Dr. Cantrell seconded, that the plan of publicity campaign advocated by Dr. F. B. Wynn, chairman of the Committee on Scientific Work, be received and placed on file. Carried.

Dr. Jones moved, Dr. Councilman seconded, that Drs. F. G. Novy, G. H. Simmons and H. W. Wiley be declared elected to the Council on Pharmacy. Carried.

Dr. Jones moved, Dr. Marvel seconded, that the Board of Trustees again call the attention of all officers of the Association and all heads of committees to the necessity of presenting to the Board of Trustees an annual budget, and request that all expenses be kept within the appropriations made. Carried.

Dr. Councilman moved, Dr. Jones seconded, that an additional $500 be appropriated to the Committee on Defense of Medical Research. Carried.

Drs. I. Abt and F. S. Churchill, on behalf of a number of pediatrists, presented a communication requesting the publication, by the Association, of a journal devoted to pediatrics. Dr. Jones moved, Dr. Sarles seconded, that a committee of eleven be appointed by the chairman to secure information for the Trustees in regard to the publication by the American Medical Association, of a journal devoted to pediatrics. Carried. The chairman appointed Drs. I. Abt of Chicago, chairman, and Drs. A. Jacobi, L. E. Holt, Thomas Southworth and G. Pisek of New York, T. M. Rotch of Boston, E. E. Graham and J. P. C. Griffith of Philadelphia, W. J. Butler, J. M. Dodson and F. S. Churchill of Chicago.

Dr. Jones moved, Dr. Sarles seconded, that bill of Dr. McCormack, $842.40, for expenses from July 23 to February 5, be paid. Carried.

Dr. Jones moved, Dr. Councilman seconded, that the $850 requested by the Council on Pharmacy and Chemistry be granted. Carried.

A letter of the lawyers in regard to the status of the American Medical Association Public Health Education Committee of Women was read and ordered spread on the minutes. Dr. Marvel moved, Dr. Daugherty seconded, that the communication received from the chairman of the committee be acknowledged by the chairman of the board. Carried.

Drs. Bracken, Evans and McCormack then appeared before the Board and presented a communication relating to the

establishment of a Bureau of Legislation, Organization and Publicity. Dr. Cantrell moved, Dr. Sarles seconded, that the chairman appoint a committee of two from the Trustees, to meet with Drs. Bracken, Evans, Reed, McCormack, Clark and Price (previously appointed by the House of Delegates) to prepare a plan for the formation of this council and to suggest the necessary changes in the Constitution and By-laws to carry the plan into effect, and that this committee report to the Board of Trustees prior to the meeting in St. Louis. Carried.

THIRD SESSION, FEBRUARY 5, HELD FROM 10 A. M. TO 12:45 P. M.

Dr. Sarles moved, Dr. Cantrell seconded, that the chairman be made a member of the committee to devise plans, etc., for the Council on Legislation, Organization and Publicity. The chairman then appointed as members of the committee, from the Trustees, Drs. Harris and Cantrell. Carried.

A report from the Committee on Refraction by Dr. Connor was read and ordered placed on file.

A request was received from Dr. A. D. Bevan and others asking that the Association publish a journal devoted to surgery. Dr. Jones moved, Dr. Councilman seconded, that a committee of eleven be appointed by the chairman to secure information for the Trustees in regard to the publication, by the American Medical Association, of a journal devoted to surgery. Carried. The chaiman appointed Dr. A. D. Bevan of Chicago, chairman, and Drs. J. F. Binnie, Kansas City, Kan.; J. C. Bloodgood, Baltimore; George E. Brewer, New York; George W. Crile, Cleveland, Ohio; A. F. Jonas, Omaha; Rudolph Matas, New Orleans; W. J. Mayo, Rochester, Minn.; J. G. Mumford, Boston; Charles A. Powers, Denver; and Emmett Rixford, San Francisco.

A report from the Committee on Ophthalmia Neonatorum was then read. Dr. Jones moved, Dr. Cantrell seconded, that the report be accepted and the committee thanked for its excellent work. Carried.

Dr. Harris reported progress as a member of the Committee on Postal Relations.

Dr. Jones moved, Dr. Councilman seconded, that Dr. George H. Simmons be reelected Editor and General Manager for the ensuing year. Carried.

There being no further business, the minutes of the meeting were read and approved and the Board of Trustees adjourned *sine die* at 12:45 p. m.

M. L. HARRIS, Chairman.
WISNER R. TOWNSEND, Secretary.

HOTELS AT ST. LOUIS

Rates, Locations and Capacities of Hotels for the St. Louis Session

Members of the American Medical Association desiring to secure hotel accommodations should write to the chairman of the Hotels Committee, Dr. Louis H. Behrens, 609 Metropolitan Building, or direct to the hotels. Many reservations have already been made and prompt attention should be given to this matter in order to secure accommodations in advance.

When writing, please give definite instructions as to the character of rooms desired, whether with or without bath, European or American plan, number of people in the party, and particularly the names of persons who are willing to share rooms.

As the section meeting places are located along Grand avenue, which is a thoroughfare about midway between the east and west ends of the city, the hotels are listed according to their location, and the time consumed in riding to the meeting-places is mentioned.

The first list comprises those hotels located in the downtown, or east, section of the city:

AMERICAN HOTEL, Seventh and Market Sts., 275 rooms, all with bath; can take 350; rate, one person, $1.50 and up; additional, $1 per person; 15 minutes from meeting place.

EDISON HOTEL, 107 N. Eighth St., 12 rooms; can take 24; rate, one person, $1; additional, $1 per person; 15 minutes from meeting place.

HOTEL GARNI, Jefferson and Olive Sts., 50 rooms; can take 50; rate, one person, $0.75 and up; additional, $0.50 per person; 8 minutes from meeting place; near Coliseum.

JEFFERSON HOTEL, Twelfth and Locust Sts., 400 rooms; can take 360; rate, one person, $1.50 and up; with bath, $2.50 and up; additional, $1 per person; with bath, $1.50 per person; 8 minutes from meeting place.

LACLEDE HOTEL, Sixth and Chestnut Sts., 170 rooms; can take 150; rate, one person, $1 and $1.50; with bath, $2 to $2.50; additional, $1 per person; 15 minutes from meeting place.

MADISON HOTEL, Broadway and Chestnut St., 112 rooms; can take 100; rate, one person, $1 and up; additional, $0.75 and up; 15 minutes from meeting place.

MARQUETTE HOTEL, Eighteenth and Washington Ave., 400 rooms; can take 250; rate, one person, $1.50 and up; with bath, $2 and up; additional, $1 per person; 8 minutes from meeting place.

MARYLAND HOTEL, Ninth and Pine Sts., 240 rooms; can take 200; rate, one person, $1 to $2; with bath, $2 to $2.50; additional, $1 per person; 10 minutes from meeting place.

MOSER HOTEL, 809 Pine St., 100 rooms; can take 75; rate, one person, $0.75 and $1; additional, $0.75 per person; 10 minutes from meeting place.

PLANTERS HOTEL, Fourth and Pine Sts., 440 rooms; can take 300; rate, one person, $1.50 and up; with bath, $2.50 and up; additional, $1 per person; with bath, $1.50 per person; 15 minutes from meeting place.

PORTLAND HOTEL, 1817 Market St., 100 rooms; can take 100; rate, one person, $1; additional, $0.75 per person; 10 minutes from meeting place.

ROZIER HOTEL, Thirteenth and Olive Sts., 120 rooms; can take 180; rate, one person, $0.75 to $1.50; additional, $0.75 per person; 8 minutes from meeting place.

ST. JAMES HOTEL, Broadway and Walnut, 150 room; can take 200; rate, one person, $1.50; with bath, $2; additional, $1 per person; with bath, $1.50 per person; 15 minutes from meeting place.

ST. NICHOLAS HOTEL, Broadway and Market, 40 rooms; can take 25; rate, one person, $0.75 to $1; additional $0.50 per person; 15 minutes from meeting place.

SOUTHERN HOTEL (General Headquarters), Broadway and Walnut, 400 rooms; can take 200; rate, European plan, one person, $1.50 and up; with bath, $2.50 and up; American plan, one person, $3.50 and up; with bath, $4 and up; additional, European plan, $1.50 and up per person; American plan, $3.50 and up per person; 15 minutes from meeting place.

STRATFORD HOTEL, Seventh and Pine Sts., 100 rooms; can take 150; rate, one person, $1; with bath, $1.50; additional, $0.50 per person; 15 minutes from meeting place.

TERMINAL HOTEL, Union Station, 110 rooms; can take 150; rate one person, $1.25 and up; with bath, $2.50 and up; additional, $1.25 per person; 10 minutes from meeting place.

The following hotels are located in the west end, or residence section, of the city:

BEERS HOTEL, Grand and Olive, can take 40; rate, one person, $1 and up; with bath, $2.50, and up; additional, $1 per person; at meeting place.

BUCKINGHAM HOTEL, Kingshighway and West Pine, can take 100; rate, one person, European plan $1.50; with bath, $2.50; additional, $1 per person; rate, one person, American plan $3; with bath, $4; additional, $2.50 per person; 10 minutes from meeting place.

HAMILTON HOTEL, Hamilton and Maple Ave., 150 rooms; can take 50; European plan, rate, one person, $1; with bath, $1.50; additional, $1 per person; American plan, one person, $2; with bath, $2.50; additional, $1.50; 15 minutes from meeting place.

HOTEL BERLIN, Berlin and Taylor Ave., can take 25; American plan, rate, one person, $1.50; with bath, $2.50; additional, $1 per person; 10 minutes from meeting place.

USONA HOTEL, Kingshighway and McPherson, 100 rooms; can take 50; American plan, rate, one person, $2.50; with bath, $3; additional, $1.50 per person; with bath, $2 per person; 10 minutes from meeting place.

WEST END HOTEL, Waydeventer and W. Belle, can take 25; rate, one person, $1 and up; with bath, $1.50 and up; additional, $1 and up; 5 minutes from meeting place.

WESTMORELAND HOTEL, Maryland and Newstead Ave., can take 50; all rooms with bath; rate, one person $2; additional, $1 per person; 8 minutes from meeting place.

WINDSOR HOTEL, 5001 Delmar Blvd., American plan only; can take 25; rate, one person, $1.50; with bath, $2.50; additional, $1 per person; 15 minutes from meeting place.

PRIVATE HOMES AND BOARDING HOUSES

In addition to the hotels listed there are numerous private homes and boarding-houses on and near Grand avenue, in close proximity to the section meeting-places, where good accommodations can be secured at rates ranging from 75 cents to $1.50 a day, American plan. Those who desire to obtain such accommodations should write to the chairman, Hotels Committee, at the address given above. State clearly what accommodations are desired, for how many people, and at what rate per day.

SECTION HEADQUARTERS

Hotel headquarters for sections have been assigned as follows:

SECTIONS	HOTELS
General Headquarters	Southern Hotel
Surgery	Jefferson Hotel
Dermatology	Jefferson Hotel
Laryngology and Otology	Jefferson Hotel
Practice of Medicine	Planters Hotel
Pathology	Planters Hotel
Pharmacology and Therapeutics	Planters Hotel
Ophthalmology	Marquette Hotel
Obstetrics and Diseases of Women	Marquette Hotel
Diseases of Children	Marquette Hotel
Nervous and Mental Diseases	Buckingham Hotel
Preventive Medicine	Buckingham Hotel
Stomatology	West End Hotel

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

UTILIZATION OF GARBAGE IN SUPPLYING POWER FOR WATERWORKS, ETC.

To the Editor:—Can you furnish data concerning the utilization of city refuse, such as garbage and old paper, for supplying power for waterworks and other municipal plants, or tell me where such data can be obtained? STEPHEN C. MASON, JR., Menominee, Mich.

ANSWER.—The economical disposal of garbage and refuse in cities and towns is an engineering as well as a sanitary problem of no small importance, and has been the subject of a great deal of study and experiment. It cannot be said that a practical and economical solution has yet been evolved. In many cities, such refuse has been made a source of revenue to the extent of paying a part of the expense of disposal, but nowhere in this country has it been successfully utilized in the way of fuel for running city plants to the extent named in the inquiry. In Great Britain more success has been attained in this respect, but it is said that such waste contains more combustible material than in this country. In Boston and in New York, and perhaps in some other cities in the United States, incinerators have been established which dispose of a part of the waste. After it is picked over by contractors who pay certain sums for the usable material they can get from it, the residue is burned, sufficient heat being produced to furnish steam for running a belt conveyor and perhaps baling presses. One incinerator under the Williamsburgh bridge in New York also furnishes enough heat to make electric light for lighting the bridge. The proximity of the water in the boilers of steam plants seems to cool the fire so that combustion is not perfect even under forced draft, and if the boilers are placed far enough away from the fire box to overcome this difficulty much of the heat is lost. In many cities and towns where incinerators and plants for the utilization of the waste for power purposes have been established they have later been abandoned and other methods of disposal adopted.

The following references may be consulted:

Chapin: Municipal Sanitation in the United States, The Providence Press, Providence, R. I., 1901.

Goodrich: Disposal of Town Refuse, Wiley, New York, 1901.

Baker: Municipal Engineering and Sanitation, Macmillan Co., New York, 1902.

THE JOURNAL, July 3, 1909, p. 43, in an article in Queries and Minor Notes, gives further references.

The Public Service

Medical Department of the Army

Changes for the week ended March 26, 1910:

Taylor, Blair D., col., ordered to make an inspection of the Medical Department, and a sanitary inspection of Key West Barracks, Fla., Forts Dade and De Soto, Fla.

Bryan, Ray W., lieut., granted 2 months' leave of absence.

Jordan, Edward H., 1st lieut., M. R. C., orders to Fort Ward, Wash., revoked; relieved from active duty in the Medical Reserve Corps, to take effect on expiration of leave of absence granted him for 1 month and 1 day.

Ruffner, Ernest L., major, on arrival at San Francisco, to proceed to Fort Missoula, Mont., for duty.

Thomason, Harry D., capt., relieved from duty at Fort Missoula, Mont., and will repair to this city and report in person to the Chief of the Division of Militia Affairs, War Department, for duty in his office.

Wales, Philip G., major, ordered to proceed from Presidio of Monterey, to the Army General Hospital, San Francisco, for observation and treatment.

Johnson, Charles W., 1st lieut., M. R. C., relieved from duty at Fort Des Moines, Iowa, and will proceed to his home, and on arrival there will report by telegraph to The Adjutant General of the Army, for further orders.

Woodson, Robert S., major, ordered to report in person to Brigadier General William P. Hall, Adjutant General, President, Army Retiring Board, Washington, D. C., at such time as he may designate for examination by the board.

Lyster, Theodore C., major, on expiration of present leave of absence, directed to proceed to Manila, P. I., for duty on transport sailing from San Francisco, about May 5, 1910.

Raymond, H. L., lieut. col., will stand relieved from duty as Chief Surgeon, Headquarters, Department of Dakota, March 24, 1910, to enable him to comply with orders for the Philippine Islands.

Pulver, Arthur L., 1st lieut., M. R. C., ordered to proceed from Fort Porter to Fort Wadsworth, N. Y., for temporary duty.

McCallum, F. M., 1st lieut., M. R. C., honorably discharged from the service of the United States.

Tukey, William H., 1st lieut., M. R. C., orders to duty in the Philippine Islands, revoked; relieved from duty at Boise Barracks, Idaho, and will proceed to his home.

Public Health and Marine-Hospital Service

Changes for the week ended March 23, 1910:

Stoner, G. W., surgeon, granted 16 days' leave of absence from March 24, 1910.

Mead, F. W., surgeon, directed to proceed to Georgetown, S. C., on special temporary duty.

White, J. H., relieved as chairman of board of medical officers convened to meet April 4, 1910.

Carrington, P. M., surgeon, directed to proceed to San Francisco, on special temporary duty.

McIntosh, W. P., surgeon, detailed to represent the service at the meeting of the Association of American Medical Colleges, to be held in Baltimore, March 21-22, 1910.

Wickes, H. W., P. A. surgeon, relieved as recorder and detailed as chairman of board of medical officers convened to meet April 4, 1910.

Von Ezdorf, R. H., P. A. surgeon, leave of absence granted Jan. 19, 1910, amended to read 1 month and 6 days from Jan. 15 and 20 days from March 10, 1910.

Korn, W. A., P. A. surgeon, granted 2 days' leave of absence from March 22, 1910.

Pettyjohn, Joseph, P. A. surgeon, detailed as recorder of board of medical officers convened to meet April 4, 1910.

Hotchkiss, S. C., asst.-surgeon, granted 1 day's leave of absence in February, 1910, under paragraph 191, Service Regulations.

Dynan, N. J., acting asst.-surgeon, granted 4 days' leave of absence from Feb. 28, 1910, under paragraph 210, Service Regulations.

McKay, W. W., acting asst.-surgeon, granted 30 days' extension of leave from Feb. 5, 1910, on account of sickness.

Walkley, W. S., acting asst.-surgeon, granted 3 days' leave of absence from March 29, 1910.

Board of medical officers were convened to meet on April 4, 1910, for the purpose of making physical examinations of applicants for the position of cadet in the Revenue-Cutter Service, as follows: Wilmington, N. C., Surgeon C. H. Gardner, chairman; Acting Assistant-Surgeon W. D. MacMillan, recorder. Milwaukee, Wis., Surgeon J. O. Cobb, chairman; Acting Assistant-Surgeon C. H. Stoddard, recorder.

Board of medical officers convened to meet at Boston, for the purpose of reexamination of an alien. Detail for the board: Passed Assistant Surgeon T. W. Salmon, chairman; Acting Assistant-Surgeon M. V. Safford; Acting Assistant-Surgeon H. B. C. Riemer, recorder.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of State of, Mobile, April 19-22.
Amer. Assn. of Genito-Urinary Surgeons, Washington, D. C., May 3-4.
Amer. Assn. of Pathologists and Bacteriologists, Washington, May 3-5.
American Climatological Association, Washington, D. C., May 3-5.
American Dermatological Association, Washington, D. C., May 3-5.
American Gynecological Society, Washington, D. C., May 3-5.
American Laryngological Association, Washington, D. C., May 3-5.
Am. Laryn., Rhin. and Otol. Society, Washington, D. C., April 28-30.
Amer. Medico-Psychological Association, Washington, D. C., May 3-5.
American Neurological Association, Washington, D. C., May 3-5.
American Ophthalmological Society, Washington, D. C., May 3-4.
American Orthopedic Association, Washington, D. C., May 3-5.
American Otological Society, Washington, D. C., May 3-5.
American Pediatric Society, Washington, D. C., May 3-5.
American Surgical Association, Washington, D. C., May 3-5.
American Therapeutic Society, Washington, D. C., May 5-7.
Arizona, Medical Association of, Phoenix, April 20-21.
Association of American Physicians, Washington, D. C., May 3-5.
California, Medical Society of State of, Sacramento, April 19-21.
Conf. State and Prov. Bds. of Health, Washington, April 28-29.
Congress of Amer. Phys. and Surg., Washington, D. C., May 3-5.
Connecticut State Medical Society, New Haven, May 25-26.
District of Columbia, Medical Association of, Washington, April 26.
Florida, Medical Association of, Jacksonville, April 6-8.
Georgia, Medical Association of, Athens, April 20-23.
Illinois State Medical Society, Danville, May 17-19.
Iowa State Medical Society, Des Moines, May 20-21.
Kansas Medical Society, Topeka, May 4-6.
Louisiana State Medical Society, New Orleans, May 3-5.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 26-28.
Mississippi State Medical Association, Oxford, April 12.
Missouri State Medical Association, Hannibal, May 3-5.
Montana State Medical Association, Hunter's Hot Springs, May 11.
Nebraska State Medical Association, Lincoln, May 10-12.
New Hampshire Medical Society, Concord, May 12-13.
North Dakota State Medical Association, Grand Forks, May 10-11.
Ohio State Medical Association, Toledo, May 11-13.
Oklahoma State Medical Association, Tulsa, May 10-12.
South Carolina Medical Association, Laurens, April 19-21.
Tennessee State Medical Association, Memphis, April 12-14.
Texas, State Medical Association of, Dallas, May 10-12.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Twentieth Annual Meeting, held at Baltimore, March 21-22, 1910

DR. GEORGE HOWARD HOXIE, University of Kansas, the President, in the Chair

Officers Elected

The following officers were elected: President, Dr. J. A. Witherspoon, Vanderbilt University; vice-presidents, Dr. Horace D. Arnold, Tufts College Medical School, and Dr. Charles R. Bardeen, University of Wisconsin; secretary-treasurer, Dr. Fred C. Zapffe, University of Illinois, reelected;

judicial council, Drs. William J. Means, Starling-Ohio Medical College, Randolph Winslow, University of Maryland, and J. R. Guthrie, University of Iowa.

Amendments Adopted

The following amendments to the Constitution were adopted:

ARTICLE III, *Section* 1 (b): For the present Latin requirement of 2 years (4 points), there may be substituted 4 years of either high-school French or German, or its full equivalent, provided a satisfactory examination is passed in the elements of Latin grammar.

ARTICLE III, *Sec. 5:* Each annual course must be of not less than 32 weeks' duration instead of 30 weeks, as heretofore. This time includes examination periods, but does not include any vacation period. It was estimated that about 2 weeks would be consumed by examinations, leaving 30 actual teaching weeks, and on this basis the new curriculum is established.

ARTICLE III, *Sec. 13:* No college a member of this Association will be permitted to employ a paid solicitor for the purpose of inducing the attendance of students, nor shall any college offer to anyone, either directly or indirectly, any reward or inducement for securing the attendance of students.

ARTICLE III, *Sec. 1* (e): The university matriculation certificate of the Association of American Universities may be accepted as a minimum requirement for admission.

President's Address: Medical Standards; Medical Pedagogics

DR. GEORGE HOWARD HOXIE, Kansas: The membership of the association is determined by a curriculum standard; it would be unwise to raise that standard beyond the reach of any school in membership; on the other hand, the legislatures of several states have adopted this standard. Schools of medicine are designed primarily for the education of practitioners of medicine. So-called research work must take a subordinate place in the average medical school. The average quality of the profession would be raised, however, by decreasing the number of practitioners. The ultimate standard will be 8 years of primary and grade schools, 4 years of high-school, 2 years of college, 4 years in a medical school, and 1 year in a large, well-regulated hospital. A boy entering the primary school at the age of 6 will be ready to begin the practice of medicine at 25, a mature age. Inquiry among the colleges in membership elicited the fact that the two-year college entrance standard seems to be the ultimate goal.

As to the length of the course, there was some difference of opinion as to whether this should be 4 or 5 years. One way out of the difficulty would be to have 2 degrees in medicine, as is now true of engineering, bachelor of medicine and doctor of medicine. To adopt the international standard as a minimum at this time would be disastrous. Medical education in America is as yet in a chaotic state. We are in a transition period, when the forms and methods of work are being differentiated and crystallized. To make the association national in scope we must not limit our membership by setting up standards that cannot be reached by some sections of our country. In other words, we must have a minimum rather than an ideal standard. It would be wiser to base standards of membership on the quality of work done in the schools and the character of the men who dictate the policy of the schools rather than on the quantitative standards. Does the school demand as high standards as its environment will permit? Does it make the most out of the material given? Furthermore, we cannot go forward more rapidly than the people and the state governments are ready to support us. The student who has had the broad training that includes the humanities as well as the sciences may lack some of the knowledge of the details of technic possessed by those who study only the sciences, but he will have the freshness and eagerness for work and a perspective that will more than compensate, even while in the medical school, for their lack. I would urge that the preliminary college years now being added to our courses be directed toward making men rather than artisans; that the languages, philosophy and the arts be given a proportionate place in their curriculum.

It seems wiser not to take radical action at this time on standards, but to continue our present standard. I believe that the association is concerned not so much with the legal and economic aspects of medical education, as with its pedagogics. We should not give so many hours of study that the students will be physically exhausted, nor should we give so much mental labor that the students become stale. Many medical schools do not require preparation for their class exercises. We should define our standards more carefully. An hour should mean a class exercise and therefore we should make clear in our statement whether the hours enumerated are total hours of study or simply hours of classroom exercise. The curriculum can be improved by giving attention to the law of variety and monotony. Each day the student should have exercises of sufficient variety to excite his attention, but not so many as to dull his interest. I would suggest that we try to arrange our clinical curriculum along the line of the three great branches of practice: medicine, surgery and obstetrics and gynecology. The clinical laboratory should not be a separate department, but a phase of the work in all the departments mentioned. The curriculum of the clinical department must center about the hospital. No school of medicine is adequate for present-day needs unless it is possessed of a hospital of its own. Clinical teaching should be practical and not irrelevant. I would suggest that we work in harmony with other organizations now interested in medical education; that we take their suggestions and recommendations and examine them in the light of our own experience, and in the light of pedagogics.

Report of Secretary

DR. FRED C. ZAPFFE, Chicago: The present membership of the association numbers 51, and cannot be increased very materially because of apparent ineligibility. The Council on Medical Education of the American Medical Association placed in its acceptable list 68 colleges. The work the council is doing is of the very greatest importance in its particular sphere, and thorough and hearty cooperation between the council and this association is greatly to be desired. To further such cooperation, I would suggest that the next annual meeting of the association be held in conjunction with the annual conference of the council, in Chicago, or elsewhere, as may be decided later. By a constitutional provision, this association must hold its meeting on the third Monday in March, but it is probable that the council is in a position to shift its time of meeting.

(*To be continued*)

MEDICAL SOCIETY OF THE MISSOURI VALLEY

Twenty-second Semi-Annual Meeting, held at Omaha, March 17-18, 1910

(*Concluded from page 1075*)

Should Operation for Ruptured Tubal Pregnancy Be Immediate or Deferred?

DR. JOHN E. SUMMERS, Omaha: In the majority, say about 95 per cent., of cases of ruptured tubal pregnancy, no operation should be done until reaction from the shock of rupture has taken place. In the remaining 5 per cent. of these cases no delay is permissible. The urgency for operation can be recognized in most patients by the differences in the initial symptoms. In borderline cases the same rules of recognition apply. A differentiation must be made between hemorrhage and shock, immediate and recurring.

DISCUSSION

DR. B. B. DAVIS, Omaha: I have done many of these operations; many of these patients will go through the original hemorrhage and shock and will rally and be in a much better condition for operation than at the beginning of the hemorrhage. For a long time I took the position that ruptured tubal pregnancy ought to be operated on at once, but for the last two or three years I have delayed operation for at least a few hours.

DR. O. BEVERLY CAMPBELL, St. Joseph, Mo.: I believe that every case of ruptured ectopic gestation is a law unto itself, and the judgment of the surgeon should be used. In many of these cases, delay in operating is indicated. My experience has been that in most cases a blood clot will form and hemorrhage cease, and that we should wait until shock has passed off and the patient has reacted before operating.

DR. DONALD MACRAE, Council Bluffs, Iowa: I am not in a position to differentiate between one case and another, and to say that this patient is or is not in a serious condition, and so in cases of ruptured tubal pregnancy I am going to operate as soon as I can, as I do not know which case is going to terminate fatally, and which is not.

The Physical Basis of Mental Disease

DR. FRANK P. NORBURY, Hospital, Ill., delivered the oration in medicine, and, among other things, said:

The interrelationship of mind and body will ever be a fruitful field for discussion, and may never be solved to the satisfaction of all, but the time is coming, and is not far distant, when the somatic will have precedence over purely mental symptoms. Our therapeutics must and will be adjusted to meet the conditions as they are, not as they are supposed to be.

Local Anesthesia

DR. LEONARD FREEMAN, Denver, delivered the oration in surgery. He referred to the early history of chloroform and ether and the dangers attending the administration of these anesthetics. Nervous and hysterical patients are not suitable for local anesthesia. The patients, he said, must be selected with care and the surgeon must consider age, temperament, nervous control of the individual, etc. Among the operations which can be done under local anesthesia he mentioned the removal of tumors of the scrotum, castrations, epididymectomies, varicocele and hydrocele operations.

Rapid and Complete Cure of Gonorrhea

DR. THOMAS M. PAUL, St. Joseph, Mo.: A cure is not complete unless it results in the absolute eradication of gonococci from the genito-urinary tract, and such a cure can never be rapid in the sense in which that term is used by the laity.

Why the Indifference of the Profession to Morphinism Should Be Changed

DR. S. GROVER BURNETT, Kansas City, Mo., described three types: 1. Simple morphinists belong to the better class of mentalities. They inherit or acquire a tendency to nerve weakness by exhaustive taxations of nerve energy. The drug is taken to relieve physical and exhaustive nerve discomfort. 2. Morphinomaniacs are lower in intellectual stability and acquirements. The inherited weakness of nerve and mind energy is the rule, and a predisposition to add acquired exhaustive states is strong. The drug is taken to relieve exhaustive psychic pain, mind pain, mind discomforts. The action of the drug is to cause further mind deterioration in a mind already near the borderline of insanity. 3. Delusional or motiveless morphinists are sufficiently over the borderline of insanity to cause them to take the drug because of faulty mind, delusional states. The condition is apt to end in a terminal insanity.

Treatment of Localized Appendicular Abscess

DR. VAN BUREN KNOTT, Sioux City, Iowa: The removal of the appendix at a secondary operation is frequently difficult because of the density of the surrounding adhesions and in the majority of instances it will be found much easier to remove it at the first operation; and this should be done rather than subject the patient to a prolonged and often serious operation. The incision is invariably made through the right rectus muscle, splitting the fibers and the peritoneal cavity freely open. A small gauze pack is tucked into the upper angle of the wound and so adjusted as to prevent any extravasation of pus toward the liver or diaphragm. Another small pack is tucked in toward the median line from the upper angle of the wound to the lower pelvis to prevent any extravasation toward the left. The abscess cavity is then freely opened with the fingers, unless opened by the peritoneal incision, and the pus is rapidly mopped up with gauze sponges. The appendix is then exposed and removed. All adhesions separating the abscess cavity from the lower pelvis are freely separated and the pus or seropus, which is usually found in the lower peritoneal pouch, is rapidly mopped up with sponges. A large split rubber tube, from one-half inch to one inch in diameter and carrying a wick of iodoform gauze is inserted through the lower angle of the wound to the bottom of the rectovesical pouch, or cul-de-sac, the protecting gauze removed and the wound closed down to the tube with interrupted through-and-through silkworm sutures. A large-size tube is important, as I believe that the first two hours of drainage are those which count. This method is not advocated for the occasional operator, but for men of great experience.

Increasing Mortality in the United States from Heart, Brain and Kidney Lesions

DR. W. F. MILROY, Omaha, directed attention to the enormous increase of deaths from these diseases and offered suggestions as to what may be done by way of remedies.

Treatment of Angiomata and Nevi

DR. JOHN PRENTISS LORD, Omaha: The angiomata fall within the pale of surgery, while nevi, involving the skin only, fall within the sphere of dermatology. The conditions are so frequently associated that it becomes impossible to divide their treatment. Boiling water is of great value in treatment of angiomata and carbon dioxid snow in treatment of pigmented hairy nevi.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Senator Owen Declares in Favor of a Department of Health

Hon. Robert L. Owen, United States Senator from Oklahoma, delivered a speech in the United States Senate, Thursday, March 24, in support of Senate Bill 6049, introduced by him, providing for a Department of Public Health. Senator Owen stated that the present loss of life from preventable diseases in the United States amounts to over 600,000 lives per annum, while the economic loss amounts to over $2,000,000,000. After calling attention to the report of the Committee of One Hundred compiled by Prof. Irving Fisher, with the assistance of many well-known scientific men as his authority for these statements, Senator Owen discussed in detail the possibilities of the prolongation of life, the prevention of yellow fever, hookworm disease, bubonic plague, and other contagious diseases. He then read the letter from Dr. Charles A. L. Reed, chairman of the Committee on Legislation of the American Medical Association, which appeared in THE JOURNAL March 19, and quoted from President Taft, Mr. Roosevelt and others as to the necessity and importance of public health legislation. Senator Owen's argument for the establishment of a department instead of a bureau is of particular interest. He said:

> It is generally agreed that these bureaus should all be brought together as one working body. To bring established bureaus under a new "bureau of public health" would be to lower the dignity of the present bureaus by making them the subordinate bureaus of a new bureau, which would be offensive to every bureau so subordinated.
>
> To bring these bureaus under a department would not lower the prestige of a bureau thus coordinated with other bureaus under the department, and would, I believe, generally meet the approval of the government officers employed in the various bureaus so coordinated, giving them a new dignity by being a distinct branch of a department of public health, through which they could enlarge their efficiency and find better expression and publicity of work done for the public health.
>
> We have had bureaus for one hundred years. They are scattered in eight departments. They have been disconnected and without coordination. They have ever been jealous of each other, the one nullifying and hampering the work of another. They have been without a responsible head because of this subdivision and because the chief of the most important of these bureaus, the Surgeon-General of the Public Health and Marine-Hospital Service, cannot express an opinion or give information until he has consulted the Secretary of the Treasury.

BUBONIC PLAGUE ON THE PACIFIC COAST

Regarding the effect of control of the quarantine service by the Secretary of the Treasury, Senator Owen instanced the history of the epidemic of bubonic plague in San Francisco:

When the bubonic plague broke out in San Francisco in 1900—one of our importations from the Orient, known in former times as the black death or the plague—the city board of health of San Francisco quarantined the Chinese district. [It is the most deadly epidemic disease known to men. In the outbreak in Bombay 220,000 cases gave 164,000 deaths. This disease, as the black death, killed 68,596 people in London in 1665, nearly half of those who remained in the city.] The United States circuit judge, on June 15, 1900, influenced by the commercial spirit of San Francisco, declared the city quarantine illegal, gratuitously observing in his opinion:

"If it were within the province of this court to decide the point, I should hold that there is not and never has been a case of plague in this city."

This high authority on bubonic plague would also have decided, "if within the province of his court, that there never would be a case in San Francisco." His judgment in the one case would be as persuasive as in the other.

Bubonic plague was then in the city. It is now scattered over the Pacific coast at points a thousand miles apart and is requiring enormous sums of money to stamp it out, and it has not been stamped out, but is now endemic and spreading through the infection of ground squirrels and rats, which continually infect each other and spread the germs of the disease over enlarging areas.

This opinion of the United States circuit judge was followed with an immediate federal quarantine of the State of California, which was the duty of the government officers in charge under the obligation of the United States to the several States of the Union and to the nations of the world. The Marine-Hospital Service officials in San Francisco declared this quarantine.

The governor of California, the senators of California, and the commercial bodies of San Francisco immediately suppressed the Marine-Hospital Service report, compelled the Surgeon-General to yield, proved a false case, and made it temporarily stand as the truth before the country. They furnished evidence and proved (?) that there was no bubonic plague in San Francisco, nothwithstanding the fact bubonic plague was there in sober truth.

The Marine-Hospital Service finally persuaded the Secretary of the Interior to cause an inquiry in January, 1901, through experts of the highest class. This unanswerable authoritative report was made on Feb. 26, 1901, finding numerous cases of bubonic plague in the heart of San Francisco. The United States quarantine law (sec. 4) required its immediate publication. It was suppressed until April 19, 1901, and until it had been given publicity by the *Occidental Medical Times*, THE JOURNAL of the American Medical Association, the *Medical News*, and the *Sacramento Bee*.

Again the commercial interests of San Francisco triumphed over the bureau and compelled the Surgeon-General, the head of the bureau, by an order of his superior officer, the Secretary of the Treasury, to agree to suppress this report, contrary to the obvious moral and sanitary duty of the United States. From that time bubonic plague has widened the area of its terribly dangerous infection from Los Angeles to Seattle, passing from rat to rat and squirrel to squirrel and from these animals to an occasional human being through the agency of the common flea. Various experts of the Marine-Hospital Service, who immediately after the report of 1901 discovered the infection outside of San Francisco and reported the truth, were by some strange fatality shortly after their several reports removed from such duty faithfully performed and sent to the ends of the world—to Honolulu, to Ecuador, and so forth.

It is a most interesting history, the details of which might with propriety be given to the Senate as showing the destructive power commercial interests can exert over the faithful servants of a subordinate bureau.

Senator Owen then argued that a Department of Public Health is absolutely essential in order to comply with the international sanitary obligations of the United States, as a bureau which is subordinate to a department is not in a position to represent the United States in international sanitary affairs. He called attention to the International Sanitary Convention of American Republics held in Washington, Dec. 2-4, 1902, which pledged the respective health organizations of the various American republics participating to cooperate for the suppression of contagious diseases, and urged that a bureau has been tried in the balance and found wanting, and that the importance of the subject, the dignity and honor of the United States, its international relations and the health and welfare of the world demand the establishment of a Department of Health.

Senator Owen then reviewed the present cost of health agencies in the United States, showing that a sum of nearly $15,000,000 is being expended by the government and that over 12,000 persons are employed. He also showed by quotations from the various party platforms, reports of committees, and other sources, that the people are ready to support such a movement, closing his address as follows:

This is a question of vast national importance. In eight years we have increased our expenditures over the average of preceding years by the huge sum of one thousand millions for the Army and Navy, and are spending 70 per cent. of the national income to cover the obligations of past wars and the preparations for possible future war, or about seven hundred millions per annum. But for war on preventable disease now costing us infinite treasure in life, efficiency, and commercial power and prestige we spend nothing and do not even employ the agencies we have in an efficient manner.

In the name of the people and in the name of the American Medical Association, whose members are the faithful and self-sacrificing guardians of the health of our people, and in the name of the Committee of One Hundred, of the American Federation of Labor, of the National Grange, and of the various health boards of the forty-six states of the Union and of the great body of learned men desiring improved sanitation and the application of the improved agencies of preventing disease, disability, and death, I pray the Senate to establish a department of public health.

The principle of the bill meets the general approval of the public-health societies and of the medical associations of the United States, and there should be no difficulty in perfecting this bill and in impressing on the country the importance of organized effort to control the ravages of tuberculosis, typhoid and malarial fevers, bubonic plague, and other preventable diseases, which inflict such enormous injury on the people of the United States, impose such vast, but needless, human misery and pain, with great financial loss and loss of prestige and power.

A commercial nation will not be unmindful of the commercial value of the saving of life and efficiency possible, which is worth $3,000,000,000 per annum.

A humane nation will not fail to act when it is known that we could save the lives of 600,000 of our people annually, prevent the sickness of 3,000,000 of people per annum, who now suffer from preventable disease, and greatly abate the volume of human pain, misery, and death.

I trust, Mr. President, that the Senate may not fail to take action in regard to this matter at the present session.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Eighth Month—Third Weekly Meeting

PHARMACOLOGIC AND THERAPEUTIC ACTIONS OF DRUGS (CONTINUED)

VII. DRUGS ACTING ON BODILY HEAT: A. Drugs which decrease bodily temperature, antipyretics. Thermogenesis, thermolysis, thermotaxis. 1. Drugs increasing loss of heat. 2. Decreasing production of heat. B. Drugs which cause rise of temperature.

VIII. DRUGS ACTING ON RESPIRATION: A. Drugs altering composition of air, by inhalation. 1. Drugs acting generally, anesthetics, amyl nitrite, etc. 2. Drugs stimulating bronchial secretion. 3. Drugs disinfecting foul secretions. 4. Relieving spasm of bronchial tubes. B. Drugs acting on respiratory centers. 1. Stimulants. 2. Depressants. C. Drugs affecting bronchial secretion. 1. Increasing. 2. Diminishing. 3. Disinfecting. D. Drugs relaxing spasm of bronchial tubes, asthma, etc. E. Expectorants. 1. Stimulating. 2. Depressing.

IX. DRUGS ACTING ON DIGESTIVE APPARATUS: A. Drugs acting on flow of saliva. 1. Sialagogues, act by (a) stimulation of secretory cells, or nerve terminals in them, (b) stimulating afferent nerves, in mouth or in stomach. 2. Antisialagogues, act by depressing (a) secretory cells and nerve terminals, or (b) afferent nerves. B. Drugs acting on stomach. 1. Increasing amount of gastric juice secreted. 2. Decreasing amount of gastric juice secreted. 3. Drugs altering composition of gastric contents. 4. Drugs which dilate vessels of stomach. 5. Drugs which contract vessels of stomach. 6. Drugs acting on nerves of stomach. 7. Drugs acting on movements of stomach. 8. Emetics. Act locally or centrally. 9. Antiemetics. Direct or indirect.

C. Drugs acting on intestines. 1. Purgatives. Laxatives, simple purgatives, cathartics, cholagogues. 2. Intestinal antiseptics. 3. Intestinal astringents. (a) Acting on vessels, (b) coagulating albuminous fluids, (c) diminishing amount of fluid secreted, (d) lessening muscular contractions.

Marriages

JACOB KULIS, M.D., to Miss Edith A. Olsjewski, both of Chicago, recently.

FRANCIS W. MCNAMARA, M.D., to Mrs. Ella May Eldredge, both of Chicago, March 19.

WILLIAM LEON CHANNELL, M.D., to Miss Edna Ingram, both of Oakland, Cal., March 16.

E. DON TAYLOR, M.D., Watertown, Ill., to Miss Katie Swanson of Colona, Ill., at Moline, March 16.

MARANO BERNARDO DEL CARMEN CABALLERO, M.D., Porto Rico, to Miss Cecil Beatrice Mallory, at Petersburg, Va., March 17.

Deaths

Fred Byron Robinson, M.D. Rush Medical College, Chicago, 1882; a noted scientific investigator in anatomy and pathology; some-time professor of anatomy and clinical surgery in Toledo Medical College; professor of anatomy in the Post-Graduate Medical School and Hospital, Chicago; professor of surgery in the College of Physicians and Surgeons, Chicago; for thirteen years professor of gynecology and abdominal surgery in Illinois Medical College; professor of gynecology and diseases of the abdominal viscera in the Chicago College of Medicine and Surgery; a member of the Illinois State Medical Society; a man of boundless enthusiasm in the field of original research; a prolific writer; author of two volumes on intestinal surgery, four volumes on gynecologic subjects, an encyclopedic treatise on the peritoneum, and an extensive work on "The Abdominal and Pelvic Brain;" died at his home in River Forest, March 23, from disease of the kidney, aged 53.

Oliver Morse Dewing, M.D. College of Physicians and Surgeons, New York City, 1887; a member of the Medical Society of the State of New York, Associated Physicians of Long Island and American Medico-Psychological Association; formerly assistant physician in the New York Insane Asylum; transferred in 1889 to the Kings County Insane Asylum, of which he was made superintendent in 1892; appointed medical superintendent of that institution when it became a state hospital; and in 1897 made general superintendent of the Kings Park and Flatbush Insane Asylums; superintendent of the Long Island State Hospital, Flatbush; an acknowledged expert on treatment of the insane and asylum management; died at the State Hospital, Flatbush, March 15, from lobar pneumonia, aged 47. At a meeting of the staff of the hospital, March 22, resolutions of regret and sympathy were adopted.

Franklin Bennett Entrikin, M.D. Medical College of Ohio, Cincinnati, 1894; of Findlay, Ohio; a member of the American Medical Association and Association of Military Surgeons of the United States; formerly surgeon of the Second Infantry, Ohio N. G.; a member of the local pension examining board; oculist and aurist and a member of the consulting staff of the Findlay Home and Hospital; died in the Jewish Hospital, Cincinnati, March 16, from acute nephritis, after an operation for umbilical hernia, aged 38.

Orlando Scott Wood, M.D. Starling Medical College, Columbus, Ohio, 1891; College of Physicians and Surgeons, Baltimore, 1900; of Haydenville, Ohio; for six years a member of the staff of the Athens State Hospital, and for one term a trustee of the institution; surgeon of volunteers during the Spanish-American War, with service in Cuba; died in Mount Carmel Hospital, Columbus, March 14, from septicemia, due to an operation wound, aged 46.

Joseph W. Eddy, M.D. Detroit Medical College, 1874; a member of the American Medical Association and Syracuse Academy of Medicine; staff surgeon to the Oswego City Hospital; local surgeon of the New York Central System, and since 1886 chief surgeon to the Rome, Watertown and Ogdensburg division of that system; died at his home in Oswego, March 12, from acute bradycardia following cystitis and nephritis, aged 58.

Charles Peyton Gordon, M.D. New York University, New York City, 1860; surgeon in the Confederate service throughout the Civil War; a member of the Association of Surgeons of the Southern Railway Company and International Association of Railway Surgeons; for more than twenty years local surgeon of the Southern Railway at Dalton, Ga.; died at his home, March 16, from heart disease, aged 73.

William S. Wood, M.D. McGill University, Montreal, 1896; a member of the American Medical Association and Minnesota Valley Medical Association; a specialist on diseases of the eye, ear, nose and throat of Blooming Prairie, Minn.; died at the home of his father in Faribault, Minn., March 16, from pulmonary tuberculosis, following an infection of the throat, aged 36.

Arthur Delavan Stowitts, M.D. Albany (N. Y.) Medical College, 1886; a member of the American Medical Association; of Sidney, Neb.; local surgeon for the Union Pacific and Burlington systems; a member of the local board of United States Pension Examiners; died in the Methodist Hospital, Omaha, March 13, after an operation for mastoid disease, aged 48.

Henry Rhode, M.D. University of Goettingen, Germany, 1850; said to have been the oldest practitioner of Brown county, Wis.; at one time a surgeon in the Prussian army; physician of Brown county for several years, and a member of the pension examining board of Green Bay; died at his home in that city, March 16, from pneumonia, aged 80.

Ira Hudson Fry, M.D. Hahnemann Medical College, Chicago, 1881; a specialist on diseases of the eye, ear, nose and throat of Marshalltown, Iowa; while suffering from melancholia, is said to have committed suicide by hanging himself in an empty store building in Marshalltown, March 10, aged 51.

Raymond B. Harris, M.D. Savannah (Ga.) Medical College, 1859; assistant surgeon of the First and Fifty-seventh Ga. Infantry, C. S. A., during the Civil War; state senator in 1880 and 1881; an alderman of Savannah from 1889 to 1893; died at his home, March 15, from heart disease, aged 71.

John A. Hutchinson, M.D. Bennett Medical College, Chicago, 1878; a veteran of the Civil War; and at one time a member of the local pension examining board of New Haven, Conn., and later a resident of Cambridge, Mass.; died in the Soldiers' Home, Chelsea, Mass., March 13, from nephritis, aged 66.

Cyrus V. Gorrell, M.D. Fort Wayne (Ind.) College of Medicine, 1884; of Payne, Ohio; formerly a member of the American Medical Association; a member of the Ohio State Medical Association; died suddenly in the caboose of a freight train near Payne, March 7, from heart disease, aged 66.

Joel G. Williams, M.D. University of Missouri, Columbia, 1856; a member of the Illinois State Medical Society; assistant surgeon of the Second Illinois Volunteer Cavalry during the Civil War; died in a cottage at the Soldiers' Home, Quincy, March 17, from heart disease, aged 75.

John M. Coombs, M.D. Cincinnati College of Medicine and Surgery, 1865; a member of the Ohio State Medical Association; acting assistant surgeon in the Army during the Civil War; auditor of Defiance county, Ohio, in 1893; died at his home in Hicksville, March 13, aged 77.

Wade Hampton Barnett, M.D. University of Louisville, 1898; a member of the American Medical Association; a charter member and president in 1905 of the Williamson County (Tenn.) Medical Society; died at his home near Franklin, Tenn., February 28, from tuberculosis, aged 36.

Evans E. Brubaker, M.D. Starling Medical College, Columbus, 1878; a member of the American Medical Association; and local surgeon of the Chicago, Milwaukee and St. Paul Railway; died at his home in Northfield, Minn., January 6, from cancer of the liver, aged 56.

James McCann, M.D. Western Reserve University, Cleveland, 1856; of Normal, Ill.; formerly a member of the local pensioning examining boards of Joliet and El Paso, Ill.; died in the Kelso Sanitarium, Bloomington, March 18, from ptomain poisoning, aged 77.

Willis Anderson Barclift, M.D. University of Tennessee, Nashville, 1878; a member of the Medical Association of the State of Alabama; died at his home in Hartsells, March 14, after an operation performed at a hospital in Birmingham, aged 57.

Clarence W. Pickerill, M.D. Iowa Eclectic Medical College, Des Moines, 1892; of Kansas City, Mo.; formerly a member of the American Medical Association; died at the home of his parents in Lake Charles, La., February 20, from tuberculosis, aged 38.

David Allison Armfield, M.D. Jefferson Medical College, 1861; a member of the Medical Society of the State of North Carolina; for ten years United States pension examiner; died at his home in Jamestown, March 1, from pneumonia, aged 73.

William Herbert Nickelson, M.D. Hahnemann Medical College, Chicago, 1881; visiting physician to Syracuse Homeopathic Hospital; health officer of Adams, N. Y.; died in his office in that place March 14, from heart disease, aged 51.

Townsend A. Walker, M.D. University of Buffalo, N. Y., 1897; a member of the Medical Society of the State of New

York and Buffalo Academy of Medicine; died at his home in Corning, March 10, from cerebral hemorrhage, aged 40.

Hugh Alexander Utley, M.D. University of Nashville, Tenn., 1878; of Goodlettsville, Tenn., and vice-president of the National Bank of that place; died in an infirmary in Nashville, March 11, after a surgical operation, aged 56.

Warren Thomas Thornton, M.D. University of Kansas, Lawrence, 1908; a member of the staff of the Kansas City General Hospital; died in that institution, March 17, from septicemia, following a peritonsillar abscess, aged 26.

George T. Blynd, M.D. Northwestern University Medical School, Chicago, 1904; a member of the State Medical Society of Wisconsin; died at his home in Berlin, March 18, from tubercular meningitis, aged 34.

Walter Channing Blaisdell, M.D. Harvard Medical College, Boston, 1867; a member of the Massachusetts Medical Society; died at his home in Everett, Mass., Nov. 14, 1909, from acute enterocolitis, aged 65.

Myron Pelaski Fogleson, M.D. Bennett Medical College, Chicago, 1886; a member of the Michigan State Medical Society; died at his home in Harvard, January 23, from acute yellow atrophy of the liver.

Frank B. Hamilton, M.D. University of Nashville, 1867; a member of the Tennessee State Medical Association; a Confederate veteran; died at his home in Jackson, March 11, from rheumatism, aged 68.

Chester Carey, M.D. Long Island College Hospital, Brooklyn, 1881; a practitioner of Columbiaville, Mich., for thirty-five years; died at the home of his brother in Adrian, Mich., March 16, aged 62.

George L. Cunningham, M.D. University of Louisville, 1876; a pioneer practitioner of Conway county, Ark., and president of the bank of Morrillton; died at his home in that city, March 11, aged 76.

Hiram Newton Whitacre, M.D. Medical College of Ohio, Cincinnati, 1878; a member of the American Medical Association; died at his home in Carbondale, Ill., March 19, from pneumonia, aged 62.

Roswell Delavan Smith, M.D. New York Homeopathic Medical College, New York City, 1880; for many years a clergyman; died at his home in New York City, March 19, from asthma, aged 76.

John O. Dixon, M.D. Missouri Medical College, St. Louis, 1886; a member of the American Medical Association; died suddenly at his home in Marion, Ky., March 16, from heart disease, aged 49.

H. R. Trollinger (license, years of practice, Ohio, 1896); for fifty years a practitioner of Homeworth, Ohio; died at his home in that place, March 8, from cerebral hemorrhage, aged about 85.

Thomas Stuart Farrar, M.D. Trinity Medical College, Toronto, 1885; of Cedar Rapids, Iowa, was stricken with cerebral hemorrhage, on the street, March 18, and died, aged 49.

Fred W. Beil, M.D. Western Pennsylvania Medical College, Pittsburg, 1899; formerly of Sharon, Pa.; died at his home in Pittsburg, March 12, from tuberculosis, aged 35.

Valentine H. Hobson, M.D. Hospital College of Medicine, Louisville, 1889; of Richmond, Ky.; died in Lexington, Ky., March 15, from the effects of a fall from a window.

John G. MacNamara, M.D. Rush Medical College, 1884; of South St. Paul, Minn.; died suddenly in St. Joseph's Hospital, St. Paul, March 11, from heart disease, aged 55.

William Willet Moon, M.D. University of Vermont, Burlington, 1892; died at his home in Brooklyn, March 15, from pleurisy, complicating rheumatic fever, aged 40.

Greenbury Linton Shipp, M.D. University of Maryland, Baltimore, 1885; of Little Hocking, Ohio; died suddenly in that place, January 3, from heart disease, aged 47.

J. O. K. Gant, M.D. Washington University, St. Louis, 1865; a member of the Missouri State Medical Association; died at his home in Plattsburg March 8, aged 68.

William Benjamin Smith, M.D. Medical College of Ohio, Cincinnati, 1873; died at his home in Downing, Mo., March 3, from cerebral hemorrhage, aged 65.

William F. Walker, M.D. New York University, New York City, 1852; died at his home near Aberdeen, Miss., March 19, from paralysis, aged 82.

William Gregory Healey, M.D. Albany (N. Y.) Medical College, 1899; died at his home in Cohoes, N. Y., March 15, aged 30.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin.
CALIFORNIA: San Francisco, April 5. Sec., Dr. Charles L. Tisdale, 929 Butler Building.
COLORADO: Denver, April 5. Sec., Dr. S. D. VanMeter, 1723 Tremont Place.
FLORIDA: Jacksonville, April 4-5. Sec., Dr. J. D. Fernandez.
IDAHO: Boise, April 5. Sec., Dr. O. J. Allen, Bellevue.
ILLINOIS: Chicago, April 14-16. Sec., Dr. J. A. Egan, Springfield.
MINNESOTA: State University, Minneapolis, April 5. Sec., Dr. W. S. Fullerton, 214 American Nat'l Bank Bldg., St. Paul.
MONTANA: The Capitol, Helena, April 5. Sec., Dr. W. C. Riddell.
NEW MEXICO: Santa Fe, April 11-12. Sec., Dr. J. A. Massie.
OKLAHOMA: Ione Hotel, Guthrie, April 12. Sec., Dr. Frank P. Davis, Enid.
RHODE ISLAND: State House, Providence, April 7-8. Sec., Dr. Gardner T. Swarts, Room 315, State House.
WEST VIRGINIA: Wheeling, April 12-14. Sec., Dr. H. A. Barbee, Point Pleasant.

Iowa December Report

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, December 7-9, 1909. The number of subjects examined in was 8; percentage required to pass, 75. The total number of candidates examined was 8, of whom 3 passed and 5 failed. Thirteen reciprocal licenses were issued. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1908)	87.1
Sioux City College of Medicine	(1909)	81.1
University of Toronto, Ontario	(1908)	85.2

FAILED

University of Iowa, College of Medicine	(1909)	70.1
Keokuk Medical College, College of Phys. and Surg.	(1909)	72
Sioux City College of Medicine	(1909)	74.3
Rush Medical College	(1892)	68.1
St. Louis College of Physicians and Surgeons	(1909)	68.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1894) Wisconsin; (1905)	(1906) Illinois
Northwestern University Med. School	(1908) (2, 1909)	Illinois
Hahnemann Medical College and Hosp., Chicago	(1907)	Illinois
Keokuk Medical College	(1894)	Kansas
University of Louisville	(1909)	Illinois
University of Michigan, College of Medicine	(1908)	Michigan
Creighton Medical College	(1903) (1905) (1909)	Nebraska

Salicylate Treatment of Bacillus-Carriers.—How to free typhoid bacillus-carriers from their dangerous guests is a question which R. Hilgermann of Coblenz thinks can be solved by administering to them some drug that is readily eliminated by all the secretions, renders the bile more fluid and increases its amount, while it has a certain bactericidal action but is free from toxic action, even when taken for long periods. In a communication on the subject in the *Klinisches Jahrbuch*, 1910, xxii, 291, he announces that sodium salicylate fulfils all these conditions, and that he has successfully used it for the purpose in 3 cases. The bacillus-carriers in question were in the Andernach insane asylum and he gave the salicylate in 1 gm. (15 grain) doses three, four or five times a day for a week at time, giving five courses in one year in one case. The stools became entirely free from typhoid bacilli after the third course and none has been found during the nearly two years since. After even one course of the salicylate the number of typhoid bacilli rapidly diminished and those found displayed very little vitality. Experimental research has confirmed these clinical findings justifying the hope, he believes, that a course of sodium salicylate after recovery from typhoid would clear out remaining bacilli and prevent the individual's becoming a chronic bacillus-carrier. In his cases the carriers had sheltered the bacilli for so many years that it was far more difficult to dislodge them than would be the case with comparatively recent typhoid infection. The salicylate does not display such powerful bactericidal action in respect to paratyphoid bacilli.

Book Notices

ARTHRITIS DEFORMANS: COMPRISING RHEUMATOID ARTHRITIS, OSTEO-ARTHRITIS, AND SPONDYLITIS DEFORMANS. By R. Llewellyn Jones, M.B., Fellow and Member of Council of British Balneological and Climatological Society. Cloth. Pp. 353, with 38 illustrations. Price, $4 net. New York: William Wood & Co., 1909.

This book is a most interesting and valuable contribution from the viewpoint of a former medical officer of the Royal Mineral Water Hospital of Bath, England, and comes very opportunely for consideration with the recent valuable work of Goldthwait, Painter and Osgood, and the still more recent paper by Nichols and Richardson in the *Journal of Medical Research* for September, 1909. The author says that his chief aim is to indicate and emphasize the essential distinctness of the two diseases, rheumatoid arthritis and osteo-arthritis. Special consideration has been given to the premonitory symptoms which characterize the period of invasion of rheumatoid arthritis, in the hope that it may assist in the early recognition of the affection so essential to its successful treatment. From the historical chapter one learns that there have been even more etiologic theories than names advanced for this disease or group of diseases; and with reason.

From the author's standpoint there are two distinct diseases, namely, rheumatoid arthritis and osteo-arthritis; whereas, we in America, viewing the condition somewhat more from the pathologic findings, include all under the term osteo-arthritis, and pathologically divide the cases into the atrophic and hypertrophic varieties, although the work of Nichols and Richardson has shown that identical pathologic findings clearly arise from a variety of causes, in fact from about all of the causes that have heretofore been regarded as etiologic factors.

We recommend the perusal of this book to all those interested in chronic non-tuberculous joint diseases; but we call attention to the fact that the author uses the terms "atrophic arthritis" and "hypertrophic arthritis" in the ordinary sense of obvious atrophy and hypertrophy of the joints, and not in the sense used by Nichol and Richardson, which is based on the microscopic findings in the joint structures. The historical references are most numerous and range from Cicero and Shakespeare down.

DISEASES OF CHILDREN. Translated by J. L. Salinger. Edited by Abraham Jacobi, M.D., LL.D., Consulting Physician Mt. Sinai, Bellevue and German Hospitals, etc. Pp. 828, with 34 illustrations. New York: D. Appleton & Co., 1910.

Perhaps no more accurate or illuminating statement could be made concerning the quality of this work by twenty-three German and Austrian authors than that of the editor. As he says, the articles are all written by masters of national or international renown, are evidently weighed with care and guided by learning, and are brief but complete and lucid. The list of authors includes such names as Czerny, Neumann, Hoffa, Henoch, Heubner, Baginsky, Escherich, C. Keller and others equally authoritative. The book is hardly in the usual text-book style, but each monograph is written in the complete and thorough manner of the Germans, and all coordinated, so that there is no overlapping in the treatment of the subjects. Among the unusually complete chapters is that on the diseases of the new-born, which includes a very interesting section on those infectious diseases which may be transmitted from the mother or father to the fetus. Other chapters are on infantile scurvy, rickets, syphilis, convulsions, infantile paralysis and scarlet fever. In a few instances the treatment is not very fully given, but is usually sufficiently complete. As is usual in foreign works, the work of American authors in pediatrics is not referred to except casually in a few instances, and the editor calls attention to this fact. This is partially compensated for, however, by careful, even critical editing by Dr. Jacobi, who adds a word or a phrase here and there to the text to modify a too dogmatic statement, or by way of criticism, or reference to work by Americans, and by full foot-notes in elaboration of management or treatment, or on some other phase, where it seems to be necessary. The book contains a number of charts and a few other illustrations. The translation under the supervision of Dr. Salinger is good and makes a very readable book. Aside from the preference of some for a text-book by a single author, the work is an eminently satisfactory one on the subject.

THE CAMPAIGN AGAINST MICROBES. By Etienne Burnett, M.D., of the Pasteur Institute; Head for the Vaccination Service of the City of Paris. Translated from the French by E. E. Austin, F.Z.S. Cloth. Pp. 248. Price, $2.25 net. New York: William Wood & Co., 1909.

This work consists of 227 pages. The subjects treated are cancer, tuberculosis, tetanus, sleeping-sickness, enteritis and variola; the original article by Jenner on vaccination is added as an appendix. The subjects are treated in a semi-popular way, and yet the method is a little too technical, at least for the general American reading public. It will appeal to medical men who wish to be instructed and entertained and to the better informed people who have had some technical training. The literature is freely drawn on.

In discussing cancer the author lays especial stress on the possible contagiousness of the disease, and quotes freely from experiences of himself and others to show that there is a relation between such etiologic factors as soil moisture, dirty vegetables and contact with affected individuals in cancer. In considering tuberculosis he gives a good deal of space to experiences tending to confirm the importance of food in relation to the spread of this disease, discussing at some length vaccination, and especially bovo-vaccination. Sleeping-sickness is of only general interest to Americans. Burnett reviews the geography and the history of the disease at considerable length and then discusses the possibility of medicinal cure. His discussion of enteritis is given over almost entirely to what we in this country term mucous colitis, and the fermentations taking place in the intestinal tract in relation to senility. He advocates the use of various methods of preventing intestinal putrefaction as a means of attaining old age. A large part of his article on variola is given over to a discussion of the history of the subject, and in this he has much to say of the personality of Jenner and the men of his time.

MALE DISEASES IN GENERAL PRACTICE. An Introduction to Andrology. By Edred M. Corner, M.A., Surgeon to Children's Hospital. Cloth. Pp. 462, with illustrations. Price, $6. London: Oxford University Press, 1910.

As its name indicates, this work considers the surgical diseases of the organs peculiar to the male. There are a few points which require special approval as they are unusually well presented, though much of the technic developed by American surgeons is not introduced at all and weakened by its absence an otherwise strong work. The chapter on Varicocele is good and a commendable tabulation of the ultimate results of the operation is given showing 70 per cent. of the patients as distinctly improved. Circumcision in old men is advised as a prophylactic for penile carcinoma; also nerve blocking anesthesia is recommended for the operation. A chapter on Hermaphroditism brings out several interesting case histories. Some very pleasing work on the cremasteric reflex is mentioned and certainly opens up a field for investigation. The minor operation of meatorrhaphy is recommended in preference to meatotomy. This places epithelium to mucous membrane and thus avoids the granulation tissues produced in meatotomy. Syphilis is considered only in its initial stage and a strong point is made of the variability of the gross appearance of the chancre depending on its location. In the chapter on sterility the operation of vasoepididymostomy is only mentioned as possible. In discussing vesiculitis, no mention is made of treatment through the vas deferens. In discussing tapping for hydrocele, Belfield's trocar is conspicuous by its absence. A nice point in the use of collodion dressings is illustrated by a neat diagram.

SPONDYLOTHERAPY: Spinal Concussion and the Application of Other Methods to the Spine in the Treatment of Disease. By Albert Abrams, M.D., Consulting Physician to the Mount Zion and French Hospitals, San Francisco. Cloth. Pp. 420, with 100 illustrations. Price, $3.50. San Francisco: The Philopolis Press, 1909.

Opposite the title page appears a list of twelve books by the same author. The *raison d'être* for the book under consideration appears to be that "the subject of spinal therapeutics has received less attention from the medical profession than it deserves. Even the laity knows that cold applied to the back of the neck arrests hemorrhage from the nose, and that heat applied to the small of the back may hasten menstruation. The profound and far-reaching physiologic

truths which underly these simple phenomena have either been ignored or only given inconsiderate attention."

In looking through this book of over four hundred pages with its 97 illustrations, covering practically every pathologic condition that can possibly have any relation to the spine from muscular hypotonia and vibro-suppression through osteo-arthritis, Pott's disease and spondylitis, scoliosis and spinal curvature, sacroiliac disease and sacroiliac relaxation, tumors and typhoid, syphilis, gonorrhea and rickets to pseudoesophagismus and cortical sinusoidalization and many score others, one wonders whether this is an attempt to explain osteopathy and chiropractic to the understanding of the regular practitioner, or to exploit the very ingenious percussion devices of the author, or whether it is really true that medical men really know practically nothing about the cure of disease through treatment of the spine. Let us hope that it is the latter and that a careful study of this unique volume may open new avenues of therapy heretofore undreamed of.

DIAGNOSTIC THERAPEUTICS. A Guide for Practitioners in Diagnosis by Aid of Drugs and Methods other than Drug-Giving. By Albert Abrams, A.M., M.D., Consulting Physician to the Mount Zion Hospital and the French Hospital. Cloth. Pp. 1039, with 99 illustrations. Price, $5. New York: Rebman Company [1910].

In this work the author enters what is to a large extent a new field. The attempt is made to show the use of drugs and other remedial measures in determining the diagnosis of disease. Although desirous of limiting himself exclusively to diagnostic pharmacotherapy, it was necessary to add other therapeutic procedures in order to maintain the continuity of the subject. The result of this seems to be a lack of due proportion and emphasis. In the abundance of therapeutic suggestions which flow from the author's reading and experience, it is hard to differentiate those that are of diagnostic value. Some of the statements, we feel sure, have been made without due qualification and without a full appreciation of their real significance; for instance: "Hemorrhages in typhoid fever and phthisis are really due to a plethora, and may be averted, if recurrent, by venesection," page 416. We hope that none of Dr. Abrams' readers will put this method into practice without due discrimination between hemoptysis due to congestion and hemorrhage due to erosion of a blood-vessel.

UEBER DEN EINFLUSS DER BASEDOW'SCHEN KRANKHEIT UND VERWANDTER ZUSTANDE AUF DAS LANGENWACHSTUM NEBST EINIGEN GESETZEN DER OSSIFIKATION. Aus der Poliklinik für innere Krankheiten am Serafimerlazarett in Stockholm. Von J. Holmgren, Leitendem Arzt der inneren Abteilung des Provinzialkrankenhauses zu Falun, Schweden. Paper. Pp. 244, with 2 plates. Leipzig: Druck von Metzger & Wittig, 1909.

This monograph gives the results of an investigation of 114 cases of hyperthyroidism in patients under 25 with reference to the height and growth in the length of the body. The author finds that there is an evident association of the disease with increased height, and he concludes that hyperthyroidism favors a rapid increase in the length of the body, and, considering the fact that lack of thyroid secretion, as in cases of myxedema, is accompanied by deficient growth in length, he concludes that it is one of the functions of the thyroid to control the growth of the skeleton. He calls attention also to the relation between a blond complexion and increased height on the one hand and hyperthyroidism on the other. He also brings evidence to show that infections, by action on the thyroid gland, may favor the growth in height. The volume constitutes a valuable contribution to a very interesting subject.

SURGICAL ANATOMY. By John A. C. Macewen, B.Sc. in Anatomy and Physiology with Honors, Fellow of the Faculty of Physicians and Surgeons, Glasgow. Cloth. Pp. 478, with 61 illustrations. Price, $3 net. New York: William Wood & Co., 1910.

This is a discussion of surgical anatomy, such as the physician who operates occasionally stands in need of most. The only departure from the usual work of this kind is that the author surveys the anatomy of hernia from the abdominal instead of from the external surface, which really makes very clear a subject the student usually finds rather difficult to comprehend. Naturally there can be little to criticize in a work of this kind, which is based on established facts. The illustrations, while not numerous, are well chosen and a number of them, especially in the chapter on the head, are new and helpful. The dull-finish paper and the clear, clean type are features worthy of mention. Section 1 considers the head and neck, vertebral column, brain and spinal cord; Section 2, the thorax; Section 3, the abdomen and pelvis; Section 4, the lower extremity; and Section 5, the upper extremity.

A QUIZ BOOK OF NURSING FOR TEACHERS AND STUDENTS. By Amy E. Pope, Superintendent Insular School of Nursing, San Juan, Porto Rico, and Thirza A. Pope, Supervisor of Visiting Nurses of the New York A. I. C. P. With Chapters on Visiting Nursing, by Margaret A. Bewley, R.N., Instructor in Visiting and District Nursing in the Presbyterian Hospital, New York. Hospital Planning, Construction and Equipment, by Bertrand E. Taylor, A.A.I.A., and Hospital Bookkeeping and Statistics, by Frederic B. Morlok, Chief Clerk in Presbyterian Hospital, New York. Cloth. Pp. 469. Price, $1.75. New York: G. P. Putnam's Sons, 1909.

This book, while nominally intended for teachers and students, will prove of most value to teachers, 364 of the 461 pages of text being devoted to questions and answers. The remainder takes up visiting nursing, including tuberculosis work, hospital planning and construction, and hospital bookkeeping and statistics. The book should be valuable to superintendents of hospitals, especially those who must combine with the duties of superintendent the work of matron and housekeeper.

A PRACTICAL GUIDE TO THE ADMINISTRATION OF ANESTHETICS. By R. J. Probyn-Williams, M.D., Senior Anesthetist and Instructor in Anesthetics at the London Hospital. Cloth. Pp. 228, with 44 illustrations. Price, $1.60. Second Edition. New York: Longmans, Green & Co., 1909.

Handbooks and guides to the proper administration of anesthetics appear to be gaining in favor, if we are to judge by the many books on the subject now in the market. Williams' work easily takes position as among the best of these by reason of its excellent arrangement and clearness and conciseness of style. The author has added descriptions of the newer methods and apparatus, and entirely revised the chapter on ethyl chlorid, which he regards in its proper light as a substitute for nitrous oxid and not as a rival of ether or chloroform—and added a chapter on spinal anesthesia. He would reserve the use of spinal anesthesia for those operations below the umbilicus in which a general anesthetic is dangerous to the patient and would never use it in patients who are septic.

MAMMALIAN ANATOMY WITH SPECIAL REFERENCE TO THE CAT. By Alvin Davison, Ph.D., Ex-Fellow of Prince University. Cloth. Pp. 241, with 114 illustrations. Second Edition. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1910.

This is a brief description of the anatomy of the cat, emphasizing its close relation to that of the other higher mammals. While intended primarily for students of zoology or pre-medical students it will serve as a clear concise guide for any one who has occasion to dissect the cat or one of the ordinary domestic animals. By means of numerous, well-selected illustrations, showing both histologic structure and the gross relationship of the parts, and the clear descriptions, a great deal of information is condensed into a small attractive volume.

MEDICAL DIAGNOSIS. A Manual for Students and Practitioners. By Charles Lyman Greene, M.D., Professor of Medicine and Chief of the Department in the College of Medicine, University of Minnesota. Flexible leather. Pp. 725, with illustrations. Third Edition. Price, $3.50 net. Philadelphia: P. Blakiston's Son & Co., 1910.

The third edition of this book has been largely rewritten and rearranged, includes information on all the new topics, and nothing seems to have failed to receive at least some mention. As stated in our comments on its first appearance, for a brief work on a large subject it is excellent and practical in every way.

CLINICAL MEMORANDA FOR GENERAL PRACTITIONERS. By Alex. Theodore Brand, M.D., and John Robert Keith, M.D. Cloth. Pp. 207. Price, $1.50 net. New York: William Wood & Co., 1909.

In this brief work the authors have collected memoranda, on a variety of clinical subjects. Much of this matter is not found in the ordinary text-book, but represents the personal experience of the authors. The subjects selected are such as the physician meets daily; cases are related when it is deemed necessary to emphasize diagnostic points, and hints are given as to treatment in various conditions.

ANATOMY AND PHYSIOLOGY FOR NURSES. By LeRoy Lewis, M.D., Surgeon to and Lecturer on Anatomy and Physiology for Nurses at the Lewis Hospital, Bay City, Mich. Second Edition. Cloth. Price, $1.75 net. Pp. 344, with 161 illustrations. Philadelphia: W. B. Saunders Co., 1910.

This has been revised and brought up to date by the addition of some new matter, among which are a number of illustrations.

Medicolegal

What Is Privileged Information—Inferences and Testimony as to Necessity—Duty of Physicians Employed by Other Party

The Supreme Court of Utah says, in the personal injury case of Madsen vs. Utah Light and Railway Co. (105 Pac. R. 799), that it seems quite clear that the legislature did not intend that all information, whether by communication or otherwise, which is obtained by physicians from their patients, should be privileged by the Utah statute, which provides: "A physician or surgeon cannot, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." The statute is not intended as an aid to conceal or smother the truth in a court of justice; but its object is to protect as privileged all that may be said by a patient to his physician while the relation of trust and confidence exists, and, further, to protect all the information a physician obtains through his senses of touch, sight, or otherwise, during such relation, provided the communication or information was reasonably necessary to enable the physician to accomplish the purpose for which the relation of physician and patient is called into existence.

The law does not raise a presumption either way with regard to whether the information acquired by a physician from his patient was necessary for him to prescribe for the patient, but leaves the question as one of fact. Where therefore it is made to appear that a physician prescribed for or treated a person, or that the physician obtained any information from such person for the purpose of doing so, the inference arises that such information was necessary, and, unless this inference is rebutted, the ultimate fact that it was necessary may be assumed to be established. When, however, this inference is negatived by the testimony of the physician disclosing to the court just what the facts were under which the information was obtained, then it may be that the inference is entirely overcome. Quite true, the testimony of the physician may not, in all cases and under all circumstances, be conclusive, and the court may still be justified in holding the information necessary, the statement of the physician to the contrary notwithstanding. If the rule were otherwise, the physician would have it in his power to either enforce the statute with respect to all information, or to ignore it with respect to all. This would be unreasonable.

The testimony of the physician from which the court may determine whether the information was or was not necessary to enable the physician to act is always important, and, the court thinks, should receive fair and full consideration; but in determining its weight and effect it should be considered in the light of all the facts and the surrounding circumstances. In some cases and under some circumstances the statement or information obtained from the patient may be self-explanatory, and thus a mere inspection of it, if written, or merely having it stated, if oral, may be sufficient to enable the court to determine whether the information is privileged or not. In other cases the physician's statement as to whether the information was necessary or not may be conclusive on the subject.

If, in order to enable a physician to prescribe for an injured patient, it becomes necessary for the physician to know how an accident occurred, and he obtains the information while the relation contemplated by the statute exists, the information is privileged, although it may be a narrative of the events leading to an accidental injury. Neither the trial court nor this court therefore should arbitrarily either admit or exclude all information which may relate to the accident or injury; but, in determining whether specific information should be excluded or admitted, the purpose of the statute should be kept in mind, and if, in the judgment of the court, the particular information in question comes within the statute, it should be excluded, and, if otherwise, it should be admitted in evidence.

The plaintiff in this case submitted himself into the hands of two physicians, and permitted them to administer an anesthetic so that they might make a more thorough examination of his person. The physicians made the examination for the purpose of obtaining information to enable them to treat his injury. That they also had another purpose in mind, namely, to learn the scope and effect of the injury for the benefit of the defendant company, in no way changed their relation to the plaintiff.

No doubt the company, through its agents, had a right to obtain from the plaintiff all the information with respect to the cause and extent of the injury he was willing to impart to them; but in obtaining such information it had to exercise some discretion in selecting its agents. If it selected two skilled physicians and surgeons, and thus led the plaintiff to believe or assume that those physicians sought information from him with a view of prescribing for his injuries, then such information was privileged under the statute, regardless of the fact that the physicians sought the information for the further purpose of disclosing it in a court of justice in case he brought an action for damages against the company. If the physicians desired to obtain the information for the latter purpose only, they should have explained the matter fully to him, and should have told him that they sought the information for the purpose of imparting it to the company, and not for the purpose of aiding him.

If, under the latter circumstances, the injured person permits an examination, or imparts information, no confidence is abused, and no statute is invaded, and hence he may not be heard to complain; but persons who are injured by accidents of any kind should be treated fairly by the skilled physicians who seek information of the character protected by the statute. The statute is plain, and its purpose is just and humane. It seems to this court that it is the duty of the courts to give the statute full scope and effect; but, in doing so, to prevent, if possible, either party from gaining an advantage contrary to the true spirit and intent of the statute.

Death Certificate Not Evidence

The Court of Appeals of Kentucky says, in Louisville Railway Co. vs. Raymond's Administrator (123 S. W. R. 281), wherein the administrator sought to recover from the railway company for the death of the said Raymond, alleged to have been the result of an injury caused by the negligence of the company, that the company offered in evidence a copy of the death certificate made by the attending physician, showing the cause of the death as tuberculosis. But this was not permitted to be read in evidence, and the court holds properly so, it not appearing that the physician who made it was himself dead at the time of the trial. If he were dead, a different question would be presented, though what the decision on it would be is not stated. While the Kentucky statute requires the physician to give the death certificate, there is nothing in the statute making the certificate evidence in judicial proceedings, and it stands entirely on a different plane from the return of an officer made pursuant to law under his official oath. The law requires the best evidence, and the best evidence would be the testimony of the physician, if living.

Validity of Cocain Ordinance—City Cannot Impose Forfeiture of Licenses

The Court of Appeals of Maryland holds constitutional, in Rossberg vs. State (74 Atl. R. 581), an ordinance of the city of Baltimore prohibiting the sale, furnishing, giving away, or having in possession cocain and kindred substances, or compounds thereof, except on certain conditions provided in the ordinance, but invalid so much of the penalty as provided that if the offender was a licensed pharmacist, physician, dentist, or veterinary surgeon, he should forfeit his license. The court states that it is not prepared to say that where a pharmacist, physician, dentist, or veterinary surgeon, in violation of the restrictions of the ordinance, deliberately or recklessly sells the prohibited drugs, or keeps them in his possession for the purpose of such sale, that the forfeiture of his license is so oppressive as to be unreasonable. On the contrary, it is disposed to believe that both with regard to the depravity of the offender, adequate penalty. But the trouble here was that the city charter did not give it power to declare any forfeiture, while the general rule is that an ordinance cannot create a forfeiture and to the protection of the public against the evil at which the ordinance is aimed, forfeiture of license is the only fully in the absence of express legislative authority to do it.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

March 19

1 *The *X*-Ray in Diagnosis of Pulmonary Tuberculosis. C. L. Minor, Asheville, N. C.
2 Tuberculosis and Its Treatment by Administration of Mercury. B. L. Wright, U. S. Navy.
3 *Value and Proper Method of Performance of Auscultatory Percussion of the Heart. W. F. Milroy, Omaha.
4 Plastic Induration of the Corpus Cavernosum. H. J. Whitacre, Cincinnati.
5 *Practical and Potent Means of Reducing Infant Mortality from Diarrheal Disease. J. Sobel and L. Marcus, New York.
6 Congenital Cataract, Successful Operation at the Age of 23 Years. M. Talmey, New York.
7 The X-Ray and Ultra-Violet Ray in Dental Diagnosis and Treatment. S. Tousey, New York.
8 Cerebrospinal Meningitis. C. Bagley, Baltimore.
9 Case Illustrating the Arrest of Early Paresis. T. A. Williams, Washington, D. C.

1. **X-Ray Diagnosis of Tuberculosis.**—As a means of early diagnosis, the fluoroscope, Minor says, while useful, is, save in the case of bronchial gland shadows, by no means equal to an expert use of standard physical diagnostic methods. Many *x*-ray specialists differ from this view, some maintaining that it is a far earlier means of diagnosis, but Minor is satisfied that this is chiefly due to the fact that the radiologist is rarely an expert physical diagnostician. In Germany, where several distinguished diagnosticians have used the *x*-ray freely, extreme assertions for the early diagnostic value of the ray are not so common as in this country. Hence the statement that any given case was negative on physical examination and showed shadows with the *x*-ray is of no great value unless it is known who made the physical examination. Minor has not found that the *x*-ray examination can give information antedating rough inspiration, feeble breathing or slight vesiculobronchial breathing, as it must if it is to precede physical signs, and when the pathologic conditions which produce these slight changes are considered, it seems most improbable that they should cause shadows.

3. **Auscultatory Percussion of the Heart.**—The method of performing auscultatory percussion of the heart, recommended by Milroy can easily be performed with the patient in the upright position. It is more conveniently done with the patient in the dorsal position and the examiner at his right side. The objective end of the stethoscope is placed immediately to the left of the sternum and extending upward from the fourth space. The instrument is held in this position with moderate pressure by an assistant or by the right hand of the patient. A finger of the examiner's left hand serves as the plexímeter. Milroy prefers the little finger, as thus one's hand does not interfere with the stethoscope. It is placed in the fifth intercostal space at a point so far to the left as to be entirely beyond the cardiac border. The pressure of the plexímeter finger must be uniform, as it is moved from place to place during the performance of percussion. To secure this uniformity it is advisable that the pressure of this finger be so firm that the fifth and sixth ribs are both distinctly felt in each position of the finger. The percussion stroke must be of very moderate intensity and must be uniform in force. Thus inaugurated, percussion is made from left to right until the pitch of the percussion note is observed to change, the site of this change representing the situation of the left border of the heart. In determining the situation of the right border the procedure is similar. The chest piece of the instrument is placed at the left of the sternum over the heart. Percussion is made in the fourth space, at which level is found the greatest projection of the heart to the right. Commencing well beyond the cardiac limit the examiner passes from right to left, noting the border of the heart at the point where the change in the quality of sound first appears. Similar percussion will locate the right border at other points, if so desired.

5. **Lectures and Infant Mortality.**—During the summer of 1908 and 1909, the Department of Health in New York City appointed six physicians to act in the capacity of lecturers to the mothers and "little mothers;" these lectures, or rather short heart to heart talks, were given for the greater part during the afternoons in the public school recreation centers, and occasionally at night, on the roofs of other institutions. The subject matter was summer care of babies, all that prophylaxis and treatment of the children entails. With this lecture, the authors feel that they have accomplished more actual good, gained more positive results, prevented more gastrointestinal disease and terminated more cases in their incipiency during the last two summers than during all the previous summers under other systems. The future problem of reducing infant mortality from summer diarrhea lies in the procuring of clean, cool milk. If the laity could be educated to the fact that the intelligent use of milk of the aforementioned type will prevent diarrhea a great advance will have been made. This system is only in its developmental stage and great possibilities are in store for it. With each succeeding year the daily attendance will increase so that in time a large proportion will receive instruction in this way. Already the tenement house population in New York has been aroused and interested by the dissemination of knowledge obtained at these lectures. The use of grocery milk for the feeding of infants has been markedly diminished. The vicious habits of feeding with any and all kinds of gastroenteric irritants was curtailed. The obnoxious habit of adding large quantities of brandy to boiled and cereal waters and the giving of beer and wine to older children has been in a great measure remedied.

Medical Record, New York

March 19

10 Method of Respiration by Intratracheal Insufflation: its Scientific Principle and Its Practical Availability in Medicine and Surgery. S. J. Meltzer, New York.
11 *Avoidance of Apparatus Complicating the Operation—A Paramount Requirement in Thoracic Surgery. W. Meyer, New York.
12 Experimental Intrathoracic Surgery by the Meltzer and Auer Method of Intratracheal Insufflation. A. Carrel, New York.
13 The Value of Continuous Intratracheal Insufflation of Air (Meltzer) in Thoracic Surgery. C. A. Elsberg, New York.
14 Curious Arrangement of Capsule of the Lens After Simple Extraction of Cataract. J. S. Fernandez, Havana, Cuba.
15 Lumbar Analgesia. M. Breuer, Buffalo, N. Y.

11. **Apparatus for Thoracic Surgery.**—Meyer criticizes in detail the various apparatus used in thoracic surgery and formulates the following conclusions:

1. Intrathoracic surgery cannot be done properly and safely without differential pressure apparatus.
2. Negative and positive differential pressure are, it seems, not identical in their effects on sick human beings. Whether they are or not, must still be established, and indications be found for their use. This is rendered feasible by the universal differential pressure chamber.
3. Continuous intratracheal insufflation as practiced by Meltzer and Auer appears to be a positive differential pressure system.
4. Its weak points are the use of the human trachea as a vital part of the apparatus; the possibility of aspiration at the beginning of the operation, with subsequent pneumonia, and of interstitial emphysema at the end of the operation, as a consequence of its employment; also the required deep anesthesia. Intubation reaching below the glottis has been found to give rise in the human trachea to immediate copious secretion of mucus.
5. Sudden complete interruption of the prevailing differential pressure, followed immediately by its equally sudden restoration, as practiced in continuous intratracheal insufflation, is liable to hurt the human heart. Very slight changes in intrabronchial pressure give rise to very great changes in blood pressure.
6. Continuous intratracheal insufflation apparatus is not adapted for use in the after-treatment, nor is it otherwise all-sufficient. Those employing it need some other type of differential pressure apparatus in addition to it, in order to be prepared for every emergency.
7. The safest method of general anesthesia is the one used in our every-day surgical work, the inhaling of the narcotic with spontaneous respiration and with mouth and throat left unencumbered. This method is the one used in the larger differential pressure chambers.
8. In surgery, when entrusting human life to the safe working of mechanical apparatus, it is wise to have substitutes on hand, in order to be prepared for accidents. In continuous intratracheal insufflation everything depends, at present, on the one cannula and the patency of the trachea.
9. So far as the patient is concerned, a differential pressure system leaving mouth, throat and trachea unencumbered, appears preferable to one requiring intubation.

Boston Medical and Surgical Journal

March 17

16 The Responsibility of the General Practitioner and the Specialist in the Prevention of Deafness. F. P. Emerson, Boston.
17 *Restraint Instead of Treatment in Hospitals for the Insane. L. V. Briggs, Boston.
18 Varicocele: An Analysis of Four Hundred and Three Cases. J. D. Barney, Boston.
19 The Transplantation of Cartilage in the Correction of Deformities of the Nose. D. C. Greene, Boston.

17. Restraint Instead of Treatment in Hospitals for the Insane.—It is evident to any one who has intelligently studied the conditions of the insane, that there is very little treatment and decidedly too much restraint. Fifty years ago it was not expected that insane persons would have much more than board and restraint. If they did not hurt themselves or other people, the public seemed to be satisfied. The same conditions exist as to a greater part of our insane to-day. It seems that legislation is sadly needed to abolish restraint, excepting as a life-saving measure, but if this is impossible, then to regulate the amount of restraint used, the conditions under which it shall be used, and that each individual case shall have the same amount of medical care and supervision as in any other disease. More physicians should be assigned to the care of the insane in institutions; women nurses should, to a greater extent, replace male attendants. If the barbarous custom of restraint must be continued, all appliances should be kept in the office and under the lock and key of the superintendent, who should see every patient and decide whether or not restraint is necessary, and should make a record of the kind and amount and different forms of restraint used. This should apply not only to state institutions for the insane, but to general and private hospitals.

Lancet-Clinic, Cincinnati

March 5

20 Symptoms of Pellagra. J. J. Watson, Columbia, S. C.
21 Inflammation of the Seminal Vesicles. J. N. Baughman, Evansville.
22 A Case of Amebiasis. L. J. Krouse, Cincinnati.

March 12

23 Tuberculosis of Epiphyses of the Femur and Tibia: Case Fifteen Years After Evidement. B. Holmes, Chicago.
24 Tuberculosis and Its Prevalence in Cincinnati. B. F. Lyle, Cincinnati.
25 A Comparison of Hemoglobin and Chlorophyll. W. F. Keller, Cincinnati.

March 19

26 Thyroid Diseases. L. Heimann, Evansville, Ind.
27 An Improved Technic in the Operative Treatment of Goiter. J. R. Wathen, Louisville.
28 The Surgical Treatment of Goiter. W. D. Haines, Cincinnati.
29 Tuberculosis and Its Prevalence in Cincinnati. B. F. Lyle, Cincinnati.
30 Congenital Hypertrophic Stenosis of the Pylorus. W. Schell, Terre Haute, Ind.

Virginia Medical Semi-Monthly, Richmond

February 25

31 Treatment of Suppurative Sinuses and Fistulas. L. H. Reichelderfer, Washington, D. C.
32 *Pylorospasm. J. J. Gilbride, Philadelphia.
33 Result of Late Gonorrhea. J. J. Lloyd, Lynchburg.
34 Gastroptosis. M. O. Burke, Richmond.
35 *Home Treatment of Epilepsy as Compared with Institutional Treatment. M. Woods, Philadelphia.
36 Excision of the Coccyx for Fracture and Neurosis. E. N. Lieli, Jacksonville, Fla.
37 Symptoms and Diagnosis of Typhoid. A. J. Black, Roanoke.
38 Treatment of Rheumatism. W. F. Waugh, Chicago.
39 Experience with Puerperal Eclampsia. J. H. Hiden, Pungoteague.
40 Puerperal Sapremia and Sepsis—Their Treatment. J. E. Cannaday, Charleston.

32, 35. Published in the *Pennsylvania Medical Journal*, February, 1910, and abstracted in THE JOURNAL, March 19, 1910, p. 1007.

Northwestern Lancet, Minneapolis

March 1

41 The Minnesota State Association. E. L. Tuohy, Duluth, Minn.
42 *The Minnesota State Board of Medical Examiners. F. A. Knights.
43 *The Minnesota State Board of Health in Cooperation with State Forces in Minnesota Medicine. H. M. Bracken, Minneapolis.
44 *Minnesota State Board of Control in Its Medical Relationships. H. A. Tomlinson, St. Peter, Minn.
45 *Relation of the University Medical School to the Minnesota State Medical Association. C. L. Greene, St. Paul.
46 *The Medical Press. W. A. Jones, Minneapolis.
47 *The Lay Press. H. V. Jones, Minneapolis.

42 to 47. Abstracted in THE JOURNAL, Nov. 20, 1909, pp. 1848, 1849.

Journal Missouri State Medical Association, St. Louis

March

48 *Education of the Insane. G. W. Robinson, Kansas City.
49 Otitic Sinus Phlebitis and Thrombosis: Report of a Case of Phlebitis and Thrombosis of Lateral Sinus and Jugular Bulb. W. E. Sauer, St. Louis.
50 Accidental Removal of the Stapes. F. C. Simon, St. Louis.
51 Phases of Labyrinthine Diseases Following Middle Ear and Mastoid Suppuration. C. F. Püngsten, St. Louis.
52 Methods of Clinical Teaching in Otology. S. Spencer, St. Louis.
53 Glaucoma. F. B. Tiffany, Kansas City.
54 Osteoma of the Choriold. W. H. Schutz, Kansas City.
55 Extrauterine Pregnancy in Patients with Gonorrheal Salpingitis. H. S. Crossen, St. Louis.
56 Dysmenorrhea. J. M. Dean, St. Louis.
57 The Open Method of Treating Infected Joints: Report of a Case. J. D. Seba, Bland.
58 Epidemic of Typhoid from Contamination of Missouri River Water. O. W. H. Mitchell, Columbia.

48. Education of the Insane.—The so-called chronic insane are subdivided by Robinson into three classes—the progressively incurable dements, such as the paretics and senile dements; the physically helpless, such as the paralyzed and those who are neither physically helpless nor afflicted with progressively incurable dementia. Patients in the two former classes constitute a small percentage of the hospital population, and about all they need is kind treatment, good nursing and careful attention to their physical needs. This they get in most, if not all state hospitals. The greater percentage of the population in state hospitals is composed of a class of persons who have entered the hospital as acute patients, who have not been restored to health, and who are left over, as it were, from year to year, until there is a large accumulation. These people are not sick, but are in good physical condition. They do not need hospital treatment, excepting occasionally as one of them has an acute attack of sickness of some character. For them the insane hospitals are nothing more than jails, the only function of which is custodial; the insane person must live alone with his delusions and a mind concentrated on the ego. It is not surprising that these patients frequently become violent and have to be restrained by mechanical means and sedative drugs. What they need and want is mental and physical occupation. They must be given occupation for all the faculties of the mind and work for the hands. Some of them show very little mental reduction and likewise very little perversion of mental faculties. Those who show the greatest amount of mental reduction should be treated as very small children who are beginning on the first principles of education. They should be given a kindergarten course just as the small child, with about the same course of study. Those who have suffered less mental reduction need not begin with the fundamentals, but they can begin a little farther on in the course which should be progressive in character and should be systematically carried out. In addition to the kindergarten department there should also be a well-equipped manual training department. These departments should be directed by well-qualified teachers. Every insane hospital should have a well-furnished general library for the patients' use. These patients should be encouraged to read wisely selected books and brought together at certain intervals by a competent teacher to tell what they have been reading. They should also under the direction of a well-qualified teacher be given a course of ordinary school study.

The most important part of the treatment, however, is the manual training department and ordinary labor. A course in a well-equipped and well-directed manual training department is, perhaps, the best method of producing all-around mental and physical development. Every faculty of the mind as well as the hands are exercised and developed. An industrial building for the industrial reeducation of these patients is very essential. In such a building the clothing of all the patients can be made, mattresses manufactured, furniture repaired, and much new furniture made, etc. Such a building will pay in money saved the institutions which is now spent for such supplies as can be made by the patients. Many of the women patients are now employed in all hospitals in the wards, laundry, kitchen, dining-rooms, etc., while many of the men are employed on the farm, in the dairy, in repair work on buildings, cleaning the campus, building fences, working in concrete, road building and, in short, doing about everything and every kind of work there is to do.

Long Island Medical Journal, Brooklyn

February

59 Surgery in Diabetes. L. S. Pilcher, Brooklyn.
60 Food Poisoning. E. H. Bartley, Brooklyn.
61 Laboratory Methods in Diagnosis of Typhoid. A. Murray, Brooklyn.
62 Acute Gonorrhea in the Male. J. S. Read, Brooklyn.
63 Lipoma of the Ascending Colon. R. W. Westbrook, Brooklyn.

American Journal of Medical Sciences, Philadelphia

March

64 Congenital Single Kidney: Practical Significance of the Condition with Statistics. J. M. Anders, Philadelphia.
65 The Treatment of Rheumatic Fever. F. S. Meara, New York.
66 *Decompression in Treatment of Meningitis. J. F. Hultgen, Chicago.
67 Essential Pentosuria. S. S. Cohen, Philadelphia.
68 Chemical Examination of a Sample of Urine Containing Pentose. C. H. La Wall, Philadelphia.
69 Adiposis Dolorosa with Myxedematous Manifestations. H. Stern, New York.
70 *Hemophilia with a Case of Typhoid in a Hemophilic Subject. C. W. Larned, Baltimore.
71 *Etiologic Factors of Compressed-Air Illness. L. E. McWhorter, New York.
72 *Myatonia Congenita of Oppenheim. J. V. Haberman, New York.
73 Syphilitic Paralysis of the Trigeminal Nerve. W. G. Spiller and C. D. Camp, Philadelphia.
74 Pathology of the Cranial Nerves in Tabes Dorsalis. T. A. Williams, Washington, D. C.
75 *Acute Pulmonary Edema as a Terminal Event in Certain Forms of Epilepsy. A. P. Ohlmacher, Detroit.
76 The Physiologic Utilization of Some Complete Carbohydrates. L. B. Mendel and M. D. Swartz, New York.

66. **Decompression in Meningitis.**—Hultgen reports four cases. The first case was one of serous meningitis, cured by lumbar puncture alone. The patient is now in excellent health. The second case was one of undetermined meningitis, but probably of influenzal nature (leucocytic formula, pneumonia, and otitis media). Improvement occurred after lumbar puncture and progressed to complete recovery. The patient is in good health now. The third case was one of acute meningitis, probably influenzal, with very rapid recovery after decompression. The patient is in good health now. The fourth case was one of tuberculous meningitis, with recovery. Lumbar puncture, as the only therapeutic measure used in this case, must be considered curative. The removal of intracranial hyperpressure, that is, decompression, was accomplished promptly and thoroughly by means of two consecutive lumbar punctures.

70. **Hemophilia.**—The points of interest in connection with Larned's case are: (1) the inheritance came through the father, who was himself a bleeder; (2) this is the first case, so far as Larned knows, of typhoid fever reported in a bleeder; (3) a case of typhoid may be brought to a successful termination in a patient so afflicted; (4) no hemorrhages occurred from the intestinal lesions; (5) the successful termination in this instance was probably in large measure due to the fact that at or about the age of forty the hemorrhagic tendency abated; (6) in this man's case the principal manifestation of the hemorrhagic tendency had been attacks of epistaxis, the only other serious hemorrhage having occurred at the time of an operation for ingrowing toenail.

71. **Compressed-Air Illness.**—McWhorter endeavors to prove the following:

1. In subaqueous tunnels the loss of air by leakage is sufficient to maintain perfect ventilation, and, therefore, carbon dioxid, carbon monoxid, and other gases do not accumulate in sufficient quantities to be considered possible etiologic factors in the causation of compressed-air illness.

2. The direct cause of compressed-air illness is the presence of air bubbles in the circulation; these gas bubbles consist of nitrogen, carbon dioxid, and oxygen, of which nitrogen is in excess, for the reason that this gas is the chief constituent of the atmosphere, and also does not combine with any of the body tissues.

3. New workers are most susceptible to this disease until the body accommodates itself to this entirely abnormal condition of high air pressure; and therefore, it is of the utmost importance that only young, healthy men should be allowed to do this work. New workers should, when feasible, be started in low pressures, from which in the course of four or five days, they may graduate to become, as they are called, "high-pressure men."

72. **Myomata Congenita.**—Haberman reports three cases which presented certain points in common—a rather extensive apparently flaccid paralysis, with absence of patellar and Achilles reflexes. In one there is vasomotor disturbance, in another slight atrophy, masked however, by adiposis. Viewed thus far, these cases might be taken for anteropoliomyelitis. A little closer analysis, however, will bring out certain interesting facts—namely, that two cases with certainty, and one case quite probably, date from birth, or, in other words, are congenital. Congenital cases of anteropoliomyelitis appear not to exist. Haberman believes that the one case cited in the literature has nothing to do with poliomyelitis, as two other children of the family were similarly afflicted (familial intrauterine poliomyelitis), and the paralysis was progressive—increased instead of decreasing, as is the rule in anteropoliomyelitis. Furthermore, there is no really degenerative atrophy present with reactions of degeneration. The paralysis, which is extensive, especially in two of Haberman's cases, has not gradually confined itself to an area smaller in extent than that which was at first affected, as is almost invariably the case in anteropoliomyelitis. Finally, on careful examination, one sees that some movements are present in the affected muscles, that we are not really dealing with genuine paralysis, but with an extreme condition of muscular atony. These muscles feel soft and doughy, and, except in one case, are not cold to the touch.

The clinical picture of myatonia congenita is a typical one, and may be described, Haberman asserts, as a congenital, atonic pseudoparalysis, encountered in the first two or three years of childhood, when the reflexes are very weak or abolished, electrical reaction reduced but never degenerative, real atrophy not met with, the distribution proximal with no progression, the muscles or bulbar innervation practically exempt, and no sensory, bladder, nor rectal involvement occurring. In a minimal group the children are older, contractures are present, the muscles small and thin (atrophic?).

75. **Acute Pulmonary Edema.**—The observations made by Ohlmacher in 5 cases, should, he says, tend in two directions—to emphasize the importance of acute edema of the lungs as a concurrence in epilepsy, and further to illustrate the kinship between certain types of epilepsy and status lymphaticus.

Atlanta Journal-Record of Medicine

February

77 The Chattahoochee Valley Medical and Surgical Association. A. L. Harlan, Alexander City, Ala.
78 Danger in Adenoids and Diseased Tonsils. H. R. Slack, La Grange, Ga.
79 Abortion. J. S. Horsley, West Point, Ga.
80 The Automobile as a Curative Factor in Catarrhal and Bronchial Affections. S. A. Visanska, Atlanta.
81 Treatment of Pneumonia. L. W. Johnson, Tuskegee, Ala.
82 Organ Therapy. R. Westmoreland, Atlanta.

Journal of the Medical Society of New Jersey, Orange

February

83 Points in Infant Feeding. D. E. English, Summit.
84 Ophthalmia Neonatorum. T. R. Paganelli, New York.
85 Spontaneous Rupture of Pyosalpinx into the General Peritoneal Cavity Producing Acute Diffuse Peritonitis. C. W. Bonney, Philadelphia.
86 Pyelitis: Especially Its Occurrence in Infants. T. N. Gray, East Orange.
87 The First Inklings of Disease. A. McAlister, Camden.
88 Heubner's Mustard Treatment of Catarrhal Pneumonia in Children. A. Stern, Elizabeth.
89 Directions to a Young Physician. D. Swift.

Military Surgeon, Washington, D. C.

March

90 Substitute for the Correspondence School in the Training of National Guard Medical Officers. C. C. Foster, Cambridge, Mass.
91 How May the Value of the Medical Department to the Military Establishment be Enhanced? R. G. Ebert, U. S. Army.
92 Practical Field Sanitation. H. S. T. Harris, U. S. Army.
93 Suggestion for Simplifying the Medical Equipment of Mobile Units in Campaign. C. Willcox, U. S. Army.
94 Importance to the Army of Diseases Transmitted by Mosquitoes and Methods for Their Prevention. C. F. Craig, U. S. Army.
95 Comments on the Disappearance of "Potomac Malaria" at Fort Myer, Va. F. A. Winter, U. S. Army.
96 Dangers of Introducing Infections from Our Tropical Possessions by Returning Troops. F. M. Hartsock, U. S. Army.
97 Account of an Instructive Typhoid Epidemic. P. M. Ashburn, U. S. Army.
98 Liquor Cresolis Compositus, Extempore. J. R. Barber, U. S. Army.
99 Treatment of Acute Epididymitis and Orchitis. H. Butts, U. S. Navy.
100 Shotgun Wound of Toe. F. T. Woodbury, U. S. Army.
101 Medical Service with Cavalry in the Field. W. M. Roberts, U. S. Army.
102 Military Hygiene in Cold Countries. R. H. Pierson, U. S. Army.
103 *Reinforced Plaster Splint. R. M. Thornburgh, U. S. Army.

103. **Reinforced Plaster Splint.**—The idea of this splint was suggested to Thornburgh by reinforced concrete building construction. After reduction of the fracture in the usual way, the leg is encased in one thickness of absorbent cotton and this is held in place by a few turns of roller bandage, applied tightly. A wet plaster roller is now wound round until at least two thicknesses surround the leg. A sufficient length of

wire mesh is placed along the inner side of the leg and bent over the sole of the foot to form a stirrup. By cutting a few wires here and there it can be perfectly moulded to the plaster dressing already in place. The outer side of the leg receives a similar strip of mesh but no stirrup. The strips of mesh should leave a gap of about an inch both in front and rear. While assistants hold the mesh in place the operator again applies the plaster roller until several layers are outside of the mesh. Plaster is applied by hand in the usual way, but only half as much is used as in the ordinary plaster splint. The dressing is allowed to set for several hours and then split with saw or cutting pliers down front, back, and along top of stirrup. Two perfectly formed moulds are thus made, which are held in place by adhesive straps or tapes embedded in the plaster. These straps may be tightened as the limb becomes emaciated or the pressure may be exactly regulated, for the splints will neither bend nor break. The patient can move about in bed, without danger of disturbing the relations of the fragments.

Alabama Medical Journal, Birmingham

February

104 Early Diagnosis of Tuberculosis by the Tuberculin Test. W. Litterer, Nashville.
105 Fibroid Tumors Complicating Pregnancy. G. Torrance, Birmingham.
106 *Medical Treatment of Dysentery. J. M. Lowrey, Birmingham.
107 *Acute Traumatic Fever—Etiology and Treatment. J. F. Jenkins, Piper.
108 *Traumatic Osteoperiostitis. G. A. Hogan, Birmingham.

106. Abstracted in THE JOURNAL, Feb. 5, 1910, p. 484.

107. Abstracted in THE JOURNAL, Jan. 29, 1910, p. 394.

108. Abstracted in THE JOURNAL, Feb. 19, 1910, p. 644.

Wisconsin Medical Journal, Milwaukee

February

109 The Physician and the Child. L. R. Sleyster, Appleton.
110 *Anomalies of the Mastoid from a Surgical Standpoint. H. B. Hiltz, Milwaukee.
111 The Management of Typhoid, with Special Reference to Diet. W. E. Robertson, Philadelphia.
112 The Action of Certain Oxidizing Substances on the Respiratory Center. A. S. Loevenhart and W. E. Grove, Madison.
113 The Cure of Traumatic Neurosis. T. A. Williams, Washington, D. C.

110. Abstracted in THE JOURNAL, Aug. 7, 1909, p. 480.

Journal of Biological Chemistry, Baltimore

February

114 The Optical Inactivity of Allantoin. L. B. Mendel and H. C. Dakin, New York.
115 Mechanism of the Oxidation of Glucose by Bromin. H. H. Bunzel, Chicago.
116 *Purin Metabolism of the Monkey. H. G. Wells, Chicago.
117 *Effect of Castration on the Metabolism. F. H. McCrudden, Boston.
118 Chemical Analysis of Bone from a Case of Human Adolescent Osteomalacia. F. H. McCrudden, Boston.
119 *Influence of Dietary Alterations on the Types of Intestinal Flora. C. A. Herter and A. I. Kendall, New York.

116. Purin Metabolism of the Monkey.—Wells finds that the monkey like other mammals possesses the power of destroying uric acid by an oxidase found in the liver. The urine of monekys contains very little purin nitrogen. A small amount of uric acid was found in the urine of a monkey dying from tuberculosis, but was not present in the urine of normal monkeys.

117. Effect of Castration on Metabolism.—McCrudden reaches a result somewhat at variance with the common idea that castration tends to produce obesity. There was no retention of material, especially of the mineral elements, but the results show a general tendency in the opposite direction; when there was a retention of material before castration, this retention was either decreased or became a loss after castration in almost every instance. Clinical investigation does not sustain the view that obesity is likely to follow the removal of the ovaries in women as a rule. The experiments of McCrudden appear to bear against the theory that osteomalacia is a disease of the ovaries which is cured by castration. This theory McCrudden proposes to discuss in a subsequent paper.

119. Dietary Alternations and Intestinal Flora.—The authors' experiments on kittens and monkeys show that an abrupt change in diet from a dominantly protein (meat and eggs) to a milk and sugar diet is followed by an alteration of physiologic conditions in three distinct directions (a) in the nature of the intestinal flora; (b) in the putrefactive products of the feces and urine; and (c) in the clinical conditions. The chief characteristic of the bacterial change is the gradual but rapid substitution of an acidophilic non-proteolyzing type of flora for a strongly proteolyzing type. The chief feature of the putrefactive conditions in the intestine is the reduction of the indol, skatol, phenol and bound hydrogen sulphid and a diminution in the indican and aromatic oxyacids of the urine. Clinically, the most striking feature of the change in diet is (in monkeys) an improvement in spirits and activity which may safely be construed as showing a markedly improved sense of bodily and physical well being. While some of these changes may be due to reduction of protein it seems much more probable that the changes in the flora observed are mainly due to the influence of the carbohydrates and that the diminished intestinal putrefaction is due to the combined influence of diminution in protein and the addition of carbohydrate materials to the diet. The physiologic alternations in the flora which the authors claim to have established by their studies have been noted only in normal animals. They have as yet made no effort to study the effects of diet on animals in which the digestive tract is the seat of inflammation. They consider it likely that analogous conditions will be found to exist in man.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

February

120 A Study of Hyperchlorhydria. G. M. Piersol, Philadelphia.
121 Adrenal Therapy. C. E. De M. Sajous, Philadelphia.
122 The Medical Examiner's Work as Viewed by a Special Examiner. C. O. Carter, Harrisburg, Pa.
123 Rational Treatment of Hypertension and Sclerosis of the Arterial System (continued). C. Pope, Louisville.
124 Dyspeptic Diarrhea with Pneumonia and Meningeal Symptoms. W. G. Hollopeter, Philadelphia.
125 Which Preparation of the Pituitary is the Best to Use in Tetany? I. Ott and J. C. Scott, Philadelphia.
126 Psychotherapy. W. E. Magruder, Sandy Spring, Md.
127 The Insane in Pennsylvania: What the State is Doing for Them. F. Woodbury, Philadelphia.
128 Fractures of the Patella: Modern Operative Treatment (concluded). A. P. Heineck, Chicago.

Journal of the Delaware State Medical Society, Wilmington

March

129 *Simultaneous Case of Intrauterine and Extrauterine Pregnancy. S. C. Rumford, Wilmington.
130 Dr. Jos H. Chandler. J. P. Pyle, Wilmington.
131 Id. H. W. Briggs, Wilmington.

129. Intrauterine and Extrauterine Pregnancy.—The patient last menstruated in July, 1908. April 13, 1909, she had poor labor pains, which gradually ceased after a few hours; the same thing occurred on April 17 and 24, but on none of these dates was there any dilatation of the cervix. April 26, a bloody product was passed after unusually severe pains, and proved to be a six weeks' fetus and placenta. At this time the cervix was soft and dilated and fresh blood coming from the uterine cavity. The patient was very comfortable for several days, but there was no decrease in the size of her abdomen and she still felt fetal movements. She was taken to the Delaware Hospital, Wilmington, May 3. Examination showed the abdomen distended with fluid. In the left flank a mass could at times be detected that seemed to float away from the examining hand. It was impossible to outline this mass by the vagina or to locate the fundus because of the intra-abdominal fluid, but the cervix was soft and patulous and a pale lochial discharge was present. As the patient was in poor condition and much exhausted by her trip to the hospital, a couple of days were spent in getting her in good shape for operation. On opening the abdomen by a median incision, Rumford found the cavity filled with a dark brownish and very offensive fluid, and floating about in this a male child at full term, showing very feeble signs of life. The intestines had been forced up under the lower border of the ribs, and confined there by an unusually large but thin placenta, which was adherent to the intestines, omentum, liver and the parietal peritoneum along the right side of the abdomen. The whole peritoneal cavity presented a pale, unhealthy appearance, and in separating the placental adhesions there was little tendency to bleeding. The uterus was enlarged and soft, and the tubes and ovaries normal. The child had the same pale, macerated appearance as the other structures and in delivering it the cord was broken, but from neither end was

there any bleeding. The child, after a couple of gasps, ceased breathing and its heart refused to beat in about ten minutes.

Iowa Medical Journal, Des Moines

February

132 Ophthalmia Neonatorum in Iowa. Consideration of State Prophylaxis. E. R. Lewis, Dubuque.
133 Developmental and Surgical Relation of Nose and Mouth. G. V. I. Brown, Milwaukee.
134 The Nasal Polypus. A. W. Elmer, Davenport.
135 The Course of a Frontal Sinusitis. H. Bailey, Charles City.
136 Staphylococcus Septicemia. L. W. Littig, Iowa City.
137 Two Cases of Subacute Combined Cord Degeneration. F. A. Ely, Des Moines.
138 Pellagra in Iowa. J. B. Kessler, Iowa City.

University of Pennsylvania Medical Bulletin, Philadelphia

January

139 *Resection of Posterior Spinal Roots for Relief of Spasticity. W. G. Spiller and C. H. Frazier, Philadelphia.
140 Mitral Stenosis with Multiple Emboli. H. B. Allyn, Philadelphia.
141 *Splenomedullary Leucemia in Childhood. H. T. Karsner, Philadelphia.
142 The Nature of Peculiar Bodies Found in the Leucocytes of Guinea-Pigs. J. W. Hunter, Philadelphia.

February

143 Extrasystolic Arrhythmia Simulating Heart Block. G. W. Norris, Philadelphia.
144 *Anatomy of the Epicranial Aponeurosis and Temporal Fascias. G. G. Davis, Philadelphia.
145 *Comparison of Karyokinetic Leucocytes in Different Types of Leucemia. W. Pepper, Philadelphia.
146 Additional Cases of Blastomycosis. A. J. Smith, Philadelphia.

139. **Resection of Posterior Spinal Roots for Relief of Spasticity.**—This operation was first advocated by Spiller early in 1905. He stated that it was permissible in almost every case in which spasticity is great and motor weakness is slight, provided the condition of the patient justified it, whether the lesion be spinal or cerebral, unilateral or bilateral. It is useless when motor palsy is great. Frazier performed this operation with much success in one case, which Spiller and Frazier report. The man's trouble began in December, 1903, following a drinking bout. He was examined by Spiller, Sept. 25, 1909, in view of operation. The notes of this examination are as follows: Voluntary power in lower limbs is about normal, but spasticity in these limbs is extreme. He cannot separate the thighs because of this great spasticity. The patellar tendon reflex is so exaggerated on each side that a tap on the patellar tendon throws the corresponding limb into a general clonus. Patellar clonus, so-called spinal epilepsy, persistent ankle clonus, and Babinski reflex are present on each side. Touch, pain and temperature sensations are normal in each lower limb. The cremasteric reflex is prompt on each side. The sense of position is normal in each great toe. He has control over the bladder and rectum. He is unable to walk without support (canes) because of the extreme spasticity; the toes of one foot catch behind the heel of the other foot in walking, and when he is standing still the heels do not touch the ground because of the spasticity of the calf muscles.

Spiller examined the patient again on Sept. 28, 1909, after the operation. The notes of this examination are as follows: He has touch, pain and temperature sensations in the legs below the knees and in the back of the thighs, but has no touch and temperature sensations on front of either thigh. On the front of the left thigh, he feels pin pricks, but cannot feel them on the front of the right thigh. The patellar reflex is completely lost on each side; Achilles reflex is nearly normal on the left side, but is weak on the right side. He lies with thighs far apart and legs extended. He feels touch, pain and temperature sensations in front of the abdomen. He complains of much pain low in the back, and pain is intense here on voluntary or passive movements of lower limbs. The cremaster reflex is lost on each side. He can flex slightly each lower limb at the hip, knee and ankle, and moves his toes freely. He moved his right lower limb freely, he says, a couple of hours after the operation, the left not so well. Both lower limbs and lower abdomen as far as the umbilicus feel as though dead. In October, 1909, he was able to stand if supported, but could not put much weight on the lower limbs. Pain was not so severe now as it was soon after the operation. The movements of the lower limbs were free, and he had control of the bladder and rectum. On December 17 there was great impairment if not complete loss of sensations for touch, pain, heat and cold in an area very nearly similar on the two sides and confined to the front and sides of the thighs. He can separate his thighs, flex and extend them to the normal degree. The patellar reflex is present on the left side in so far as there is distinct contraction of the quadriceps muscle, but there is no movement of the left on the thigh in this reflex. The patellar reflex on the right side is present but very weak. The Achilles reflex is nearly normal on the left side, but is very weak on the right side. Typical Babinski reflex is obtained on each side. He gets in and out of bed without difficulty. He moves his feet at the ankles with much freedom, but not to the normal degree, and places his feet firmly on the ground. There is no positive disturbance of sensation below the knees. The functions of bladder and bowels are normal. He goes up stairs with freedom, but has difficulty in descending stairs. He walks with a cane and a crutch. He has still some tendency to drag the toes, but in nothing like the degree that was present before the operation. The movements at hips and knees are nearly normal, but are still impaired at the ankles.

141. **Splenomedullary Leucemia in Childhood.**—Karsner adds one case to seven now recorded in the literature. His patient was 2 years old.

143. **Extrasystolic Arrhythmia Simulating Heart-Block.**—An interesting case of myocarditis is reported by Norris. That it was a case of myocarditis was evidenced by the physical examination by a marked limitation in the field of cardiac response, and by the pulse tracings, which showed at times a marked delay of conductivity and also a typical pulsus alternans, both of which conditions are of bad prognostic import. The patient was suffering from a very atypical form of arrhythmia, which was clinically manifested by a disappearance of every other arterial pulse wave, thus suddenly and often for a considerable interval of time halving the pulse rate. For a period of about three weeks this arrhythmia could be brought on at will by deep breathing and other simple procedures and was apparently always associated with, and at least in part the result of, increased blood pressure. It was positively not a case of auriculoventricular heart-block. The administration of digitalis invariably made the condition worse and sometimes seemed to be the direct cause of it. The effect of belladonna, on the other hand, seemed to be beneficial, and considering the diametrically opposite effect of these two drugs on the vagus, suggests that this nerve may have played an important part in the production of the arrhythmia. Certain reasons may be advanced for believing that we were not dealing with extrasystolic arrhythmia properly understood at all, but with the condition which has been designated as "true bigeminus;" the close-coupled contraction of left ventricle as well as the auscultatory examination of the heart, would, however, seem to contradict this belief. Norris believes that the form of the arrhythmia varied at different times and that sometimes it was not a "true bigeminus," at others there were undoubted extrasystoles. One other explanation, however, seems possible, *i. e.*, that the peripheral pulse intermissions simply resulted from an extreme degree of myocardial weakness, which caused the small waves of a pulsus alternans to drop out entirely. The author states that he has never seen such a case described, but can see no reason why such a state of affairs should not be perfectly possible. Three other cases are reported. Basing his conclusions on these four cases, Norris states that extrasystolic arrhythmia may simulate heart-block by the fact: (1) that the peripheral pulse may be very slow; (2) that the jugular veins may be distended and pulsate markedly in the intervals between the radial pulses; (3) that a muffled third muscular sound may be heard on auscultation over the heart which does not correspond to a peripheral pulse; (4) that there are no distinctive symptoms of true heart-block.

144. **Anatomy of Epicranial Aponeuroses and Temporal Fascias.**—Davis finds that effusions beneath the epicranial aponeurosis are limited below as follows: The occipital protuberance, superior curved line of the occiput, mastoid process, top of the ear, upper edge of the zygoma, external angular process and possibly, for a short time, at the upper edge of the orbit, but either at once or in a comparatively short time invade

first the upper and then the lower lids. The outer side of the orbit seems to be an especially favorable spot for effusions to gain entrance to the subcutaneous tissues of the lids. The accumulations occurring above the zygoma may either remain above it or possibly, especially if serous, leak through and extend a short distance below. Effusions occurring beneath the pericranium of the parietal region may, as pointed out by Richet, descend toward the temporal region, in which case they pass over the deep temporal aponeurosis.

145. **Karyokinetic Leucocytes in Leucemia.**—Pepper found that there is no more resemblance between the karyokinetic cells in acute lymphatic leucemia and in splenomyelogenous leucemia than there is between the typical "large lymphocytes" and the myelocytes of the same disease.

Laryngoscope, St. Louis

February

147 New Methods of Tuning-Fork Tests and Their Practical Significance. R. Barany, Vienna.
148 Symptoms of Internal Ear Suppuration with Presentation of Two Cases: Operation: Recovery. J. McCoy, New York.
149 Mastoid Operation, Simple and Radical, Under Local Anesthesia. E. W. Day, Pittsburg.
150 Intranasal Drainage of the Frontal Sinus. E. F. Ingals, Chicago.
151 Rhinoscleroma. A. Braun, New York.
152 Rapid and Thorough Method of Opening into the Maxillary Antrum in Selected Chronic Cases. O. J. Stein, Chicago.
153 Squamous-Celled Epithelioma of the Antrum of Highmore. A. P. Voislawsky and A. Braun, New York.
154 Diseases of the Accessory Sinuses Causing Ocular Symptoms. F. E. Waxham, Denver.
155 Laryngeal Carcinoma Under Observation for Thirteen Years—Ultimate Laryngectomy. O. Smith, New York.
156 Bronchoscopic Aid in Thoracotomy. O. C. Gaub and C. Jackson, Pittsburg.
157 An Anesthetic Attachment for the Bronchoscope. C. Jackson, Pittsburg.
158 Two Unusual and Interesting Cases of Acute Edema of the Larynx. H. Foster, Kansas City.
159 Chloretone as a Local Sedative to the Respiratory Tract. W. S. Anderson, Detroit.

Southern California Practitioner, Los Angeles

February

160 Application of the Wassermann Reaction in General Medicine, Based on 968 Examinations: Special Reference to the Blood of the Insane. R. C. Matson, Portland, Ore.
161 Immunity and Tuberculosis. W. W. Watkins, Phoenix, Ariz.
162 Surgical Technic. J. B. McNally, Prescott, Ariz.
163 Modified Smallpox. C. D. Ball, Santa Ana, Cal.
164 Trifacial Neuralgia. D. D. Whedon, San Diego, Cal.

Interstate Medical Journal, St. Louis

March

165 *Plea for Uniform Interstate Rules in Treatment of the Venereal Diseases as a Prophylaxis of the Evil of Society. A. Ravogli, Cincinnati.
166 Symptoms of Uncinariasis. G. Dock, New Orleans.
167 Pathology of Uncinariasis. N. Evans, Nashville, Tenn.
168 Early Symptoms of Pellagra. C. C. Bass, New Orleans.
169 Tetany. E. S. Cross, Savannah, Ga.

165. **Prophylaxis of Social Evil.**—As it has been demonstrated that the treatment of the venereal diseases is the best prophylaxis against the spreading of the scourge, it is clear that some interstate rules concerning this treatment would be of great advantage to combat their diffusion. These rules, according to Ravogli, could be formulated as follows:

Every hospital (unless it be for special diseases) is compelled to accept venereal patients when disabled. In every general hospital there must be a department for the treatment of venereal diseases. In these wards there must be observed complete secrecy and discretion, in order to prevent any publicity. It must be in the power of the health officer to compel any hospital to give treatment to a disabled venereal patient. In large cities the patients must have the benefit of the clinics and dispensaries attached to the hospitals or to the medical colleges. In smaller communities dispensaries must be instituted for treatment of venereal diseases, by order of the county board of health. Medicines and treatment for poor patients must be given free of charge. Physicians in charge of these dispensaries must be specialists well-trained in the treatment of these diseases.

Vermont Medical Monthly, Burlington

February

170 Prostatic Obstruction: Indications for Operation with a Description of a Method of Operating. P. Syms, New York.
171 Ileus, Mechanical and Dynamic. L. Allen, Burlington.
172 Normal Pregnancy. C. A. Pratt, Enosburg Falls.

American Medicine, New York

February

173 Surgical Treatment of Epilepsy: Methods and Possibilities of Brain Surgery. W. P. Carr, Washington, D. C.
174 Tuberculosis of the Peritoneum, Uterus and Adnexa. F. J. Shoop, Brooklyn.
175 Success in Treatment of Chronic Disease. H. R. Harrower, Chicago.
176 Action of Glandular Extracts on the Secretion of Urine. I. Ott and J. C. Scott, Philadelphia.
177 *Therapeutic Value of Diaphoresis in Treatment of Ocular Diseases. A. Brav, Philadelphia.
178 The Dermatologist as Seen by the General Practitioner. A. Rostenberg, New York.
179 How to Stamp Out Leprosy. A. S. Ashmead, New York.

177. **Diaphoresis in Ocular Diseases.**—According to Brav, the beneficial influence on the ocular processes is accomplished: (a) by enhancing and readjusting metabolic end-products and the elimination of deleterious toxic substances from the organism; (b) by the reestablishment of the equilibrium in the general circulation, removing all possible venous stasis and the purification of the blood itself by the elimination of circulating toxins, following the stimulation of the sweat glands and the direct effect on the vascular system; (c) by invigoration of the peripheral and central nervous system thus increasing the nutrition of the ocular tissues affected; (d) by its action on the lymphatics, stimulating absorption and thus carrying off the inflammatory products of the diseased part of the eye; (e) by the local stimulative effect of moist heat so important to the tissues and so essential in inflammatory processes.

Journal Arkansas Medical Society, Little Rock

February

180 Neuroses Due to Pelvic Disease Surgically Treated. W. C. Dunaway, Little Rock.
181 Malignant Malaria (Comatose Form). F. O. Mahoney, Huttig.
182 Race Suicide as the Medical Man Sees It. E. E. Barlow, Dermott.
183 Address for the Relief and Control of Tuberculosis at Pine Bluff. J. Jordan, Pine Bluff.
184 Pellagra: Steps Taken to Control the Disease in Illinois. G. A. Zeller, Peoria, Ill.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

March 5

1 The Esthetics of Anesthetics. F. W. Hewitt.
2 *Streptotrichoses and Tuberculosis. A. G. R. Foulerton.
3 Intracranial Tumor with Alterations in the Color Fields. B. Branwell.
4 *Treatment of Tuberculous Abscesses of Bony Origin by Conservative Methods. H. J. Calve and G. J. Gauvain.
5 *Variations of Temperature in Pulmonary Tuberculosis During the Menstrual Period. C. G. Welch.
6 *Proctopexy: A New Operation for Prolapse of the Rectum. J. P. L. Mummery.
7 Medical Treatment of the Poor. J. C. McVail.

2. **Streptotrichoses and Tuberculosis.**—In the course of an investigation of 53 cases of streptotrichoses in man, Foulerton found 6 distinct species of parasites. In one case it was easy to identify the streptothrix described by Eppinger; and from other cases he isolated 5 distinct species which he has not been able to identify positively with previously described parasites. The influence of occupation and other circumstances involving special exposure to the possibility of infection from a vegetable source is noticeable in this series. Of 27 persons belonging to the working classes, 19 followed trades in which they would be specially exposed to any infection which might have its source of origin in vegetable matter. Thus there were among them 5 men employed in stable work; of these, 1 had a primary pulmonary streptotrichosis and died with a secondary abscess in the cerebrum, another had a streptotrichial empyema secondary to a lung infection, 2 had abscess in the submaxillary region, and 1 had an abscess in the substance of the cheek. A patient with a streptotrichial appendicitis was a cellarman who was constantly handling the straw casings of wine bottles, and who happened also to live over some stables. Two of the patients were bakers, one with a subperiosteal abscess of the lower jaw, and one with a right iliac abscess which presumably was secondary to appendicitis. Two of the patients were gardeners, both with abscesses of the submaxillary region. Two other patients whose occupation would expose them to the risk of infection of this kind were a dairy maid, who suffered from a submaxillary abscess, and

a man with a streptotrichial appendicitis who had been employed for many years in a large timber yard.

Among these 19 workers, who by reason of their occupation might be supposed to be specially liable to infection of this kind, there was a group of 7, including 2 working tailors, 3 tailoresses and 2 dressmakers, who would be in the habit of passing cotton and thread between their lips. Of these the 2 tailors each had a submaxillary abscess; the 3 tailoresses suffered respectively from a pulmonary streptotrichosis, an acute parotid abscess and a submaxillary abscess; one dressmaker died with thrombosis of the superior mesenterie, splenic and portal veins resulting from a streptotrichial appendicitis, and the other had a submaxillary abscess. The remaining 8 of the working classes followed as many different trades, in none of which could any probable cause of any special liability to exposure to infection be traced. In 2 other cases, one that of a woman medical student who died with extensive retroperitoneal suppuration following on a streptotrichial appendicitis, the second that of a young male of no special occupation who died with infection of the lungs, liver and cerebrum—there were circumstances of interest in connection with the probable source of infection. The woman had spent a long holiday in the country ending 3 months before the onset of symptoms of appendicitis, and while away had been in the frequent habit of chewing ears of growing barley and oats as she walked through the fields. The male patient died within 4 months of leaving a farm on which he had spent several weeks during convalescence after scarlet fever.

4. **Treatment of Tuberculous Abscesses.**—The combined mixture which Calve and Gauvain use for injection into cavities after aspiration is of this formula: Iodoform, 5 grams; ether, 10 grams; guaiacol and creosote, 2 grams of each; and sterilized olive oil, 100 c.c. Of the other solutions of iodoform, iodoform combined with ether is most commonly used. Out of 29 cases of spinal caries with abscesses, 27 were cured, 2 remain with sinuses which are not infected and in which the discharge is diminishing and the general condition is good. There were 33 cases of hip disease; of these, 32 patients were cured, 1 remained with a sinus. In this case, the sinus was serious, due to a secondary infection caused by improper sterilization of the instruments employed in aspiration. The number of aspirations was from 1 to 21 in each case. At the Cripples' Home at Alton, during the last months of 1909, 23 closed tuberculous abscesses connected with lesions in the spine, hip and knee have been treated by aspiration; 8 spinal abscesses were aspirated. The greatest number of aspirations required for any one case was 12, the average number required was 3. All the patients are apparently cured, and in no case has a sinus formed. Thirteen cases of abscess in connection with tuberculous disease of the hip were treated by aspiration. Of these 12 patients had been apparently cured. In one case, a small sinus persists, but is not infected. The greatest number of aspirations required for any one case was 14. The average number was 4. Two abscesses in connection with the knee-joint have been similarly treated, and both patients are apparently cured.

5. **Phthisis and Menstruation.**—The changes associated with pulmonary tuberculosis were found by Welch to be progressively more marked in proportion to the severity and extent of the disease. Thus in early cases the changes most frequently found are a depression in the temperature, somewhat more marked but otherwise similar to that occurring in the healthy woman, except that the temperature falls on the first day and not on the day preceding the flow; and, further, the progressive and preliminary rise in the intermenstrual period appears to occur but rarely, being present in only three of his cases. In patients with two lobes affected a definite rise occurs in more than half of them while in women with three or more lobes affected a simple depression occurs in only 14.2 per cent., a rise of 57 per cent. Welch was unable to trace any definite variation of pulse rate and respiration with these changes of temperature. In like manner the amenorrhea that is so well-recognized as a sequel of this disease is found to increase progressively in proportion to the extent and severity of the disease. In early cases it occurred in 11.9 per cent., in the two-lobed in 23.7 per cent., while in the severe and advanced it occurred in as many as 62.5 per cent.

6. **Proctopexy.**—The operation devised by Mummery so anchors the rectum as to render impossible any possibility of the posterior rectal wall prolapsing. A transverse incision about 2 inches long is made about half way between the tip of the coccyx and the posterior margin of the anus. This incision should divide the attachment of the external sphincter to the coccyx and should be carried down until the posterior rectal space is opened. With the gloved finger this space is freely opened up. The height to which the posterior rectal space should be separated depends on the length of the prolapse, but in any case it should be well up into the hollow of the sacrum. The end of the gauze is left protruding from the wound which must be left open. A lot of gauze must not be pushed in, but only just sufficient to prevent the rectum and the tissues on the front of the sacrum from healing together by primary union. The external wound is carefully dressed, a piece of gauze being placed in the anus to prevent the dressings from becoming soiled. Mummery has performed this operation four times with complete success. In each case about five inches of the bowel came down previous to operation. The advantages claimed for this operation are: (1) It securely and permanently fixes the whole posterior rectal wall into the hollow of the sacrum; (2) it is simple and does not involve any serious risk; (3) it does not involve the cutting of any nerves or important structures; and (4) it restores the bowel to as near the normal condition as is possible.

British Medical Journal, London

March 5

8 *Optic Neuritis, Choked Disc, or Papilledema. Sir V. Horsley.
9 *Miner's Nystagmus. T. H. Butler.
10 *Muscular Dystrophy (Erb's Juvenile Form) Occurring in an Adult. H. L. McKisack.
11 *Action of Cutaneous Anesthetics. A. R. Short and W. Salisbury.
12 *Infantile Glaucoma or Buphthalmia. W. Allport.
13 A Case of Cyclophoria. A. A. Bradburne.
14 A Trial of Nastin. J. A. Thompson.
15 *Peritoneal Blood Transfusion. A. E. Boycott.

8. **Optic Neuritis or Papilledema.**—Horsley holds that the maximal intensity and age of papilledema or optic neuritis in cases of increased intracranial tension is of the highest value in clinical localization of the lesion, and is ipsolateral with the maximal pressure effects of the latter. Papilledema produced by increased intracranial tension commences at the upper border of the optic papilla, and invades last the inferior temporal quadrant. Horsley agrees with Mr. Gunn that the macular figure is caused by tension lines centered at the fovea, the greatest stress being just beneath the intima. The phagocytes of the retina, he says, consist of several kinds, as follows: (1) Wander-cells; (2) connective tissue corpuscles; (3) epithelioid corpuscles of the nerve fiber layer; (4) epithelioid corpuscles of the outer granule layer—the two latter varieties being in close relation to the supporting fibers of Müller.

9. **Miner's Nystagmus.**—Butler agrees with Reid and Nuel that the disease is caused by a disordered cerebration, a defect in the brain, not of the eye muscles. It is produced by the peculiar work of the miner, long-continued rhythmic movements of the pick in comparative darkness. The treatment is simple. The miner must leave the mine, and must not return to it. The prognosis must be guarded. Many patients recover completely, but, on the other hand, some never entirely lose their symptoms. In any case, a miner who has once suffered from the disease must never return to work underground.

10. **Muscular Dystrophy in an Adult.**—A "plater" in a shipbuilding yard, aged 28, had been accustomed to severe muscular exertion, particularly of the arms and back. He was a total abstainer, and had had no serious previous illnesses, except a suppurating inguinal gland, which he attributed to an injury; he denied having had any venereal disease. About two years before McKisack saw him he noticed some weakness of the arms, but soon afterward observed that his neck seemed smaller than before. These defects steadily progressed until his condition on Oct. 13, 1909, had become as follows:

Mental faculties and the sensory apparatus are unchanged; pupil reflexes are normal; left knee-jerk is brisk; right knee-jerk is defective; wrist-jerks are absent; fundus oculi is nor-

mal; the blood shows a positive Wassermann reaction. The muscles of arms and shoulders are atrophied and weak. There are no fibrillary twitchings. There was atrophy of the latissimus dorsi, lower part of the pectoralis major and supinator longus, with escape of deltoid, infraspinatous and hand muscles—a characteristic picture of the juvenile type of muscular dystrophy. The muscles of the legs, pelvic girdle and lower back are intact.

Landouzy and Dejerine's type may be excluded by the complete absence of face lesion. The deltoids and infraspinati may possibly be regarded as hypertrophied, but this is probably a genuine hypertrophy from overwork rather than the degenerative false enlargement, so that the group of pseudohypertrophic paralysis may also be rejected. Absence of fibrillary contractions and of characteristic electrical changes, together with the distribution of atrophy, remove this case from the group of spinal muscular atrophies. In spite, therefore, of the comparatively advanced age (26 years) at which the disease commenced, and of the absence of hereditary influence, McKisack believes that this case may be regarded as an instance of Erb's juvenile form of muscular dystrophy.

11. **Action of Cutaneous Anesthetics.**—The authors believe that they have been able to obtain definite evidence that none of the drugs at present in use for painting on, or rubbing into the skin have any power to relieve pain. The use of belladonna, opium, aconite, menthol and cocain for bruises, thrombosis, inflammation or neuralgia should therefore be discontinued and replaced by more efficacious means, such as rest, massage and counter-irritation.

12. **Infantile Glaucoma or Buphthalmia.**—The patient, a girl, when first seen, was 6 months old. Both eyes were constantly "running water." The corneæ were large, the globes slightly prominent, and the intraocular tension decidedly high. It was impossible to examine the fundi, owing to the intense photophobia. When the patient was 3 years old, Allport performed an interior sclerotomy, but the incision was extended so as to cut entirely through the upper part of the intercalary region. The knife as it emerged from the sclera above the cornea was not allowed to cut through the conjunctiva, but this membrane was undermined for a few millimeters, producing a bridge of tissue which held the flap-like portion of the cornea in position. The idea of this operation was to obtain a scar at the filtration angle, which would be sufficiently loose and porous to allow the intraocular fluid to escape through it under the conjunctiva, and so produce a permanent drain. A small cystoid cicatrix developed at the upper point of the incision, and a minute fistulous opening in the sclera at this point could be detected. The tension soon became normal, and the symptoms gradually abated.

In September, 1908, a similar operation was performed on the right eye, with an equally satisfactory result, and in December of that year, the intraocular tension of both eyes was normal, the photophobia had completely disappeared, and the child could see very much better. She could readily perceive a pin lying on the floor some yards away, and had accurate color perception. The fields of vision were not markedly contracted. The child presents now an almost normal appearance, the eyes merely resembling the slightly prominent globes of a myope; she no longer complains of any eye symptoms.

15. **Peritoneal Blood Transfusion.**—The observations made by Boycott suggest that intravenous transfusion is to be preferred to intraperitoneal transfusion, as giving a prospect of more lasting benefit to the recipient.

Practitioner, London

March

16 *Quiet Polypoid Sarcoma of the Nose. F. C. Madden.
17 Estimation of the Functional Activity of One or Both Kidneys. R. H. J. Swan.
18 *Failure of the Heart. E. H. Colbeck.
19 Treatment of Tuberculosis of the Knees. C. G. Watson.
20 Theory of Vaccine Therapy, with Practical Results. J. G. Taylor.
21 Treatment of Patients Before and After Abdominal Operations. H. J. Paterson.
22 Recent Work in Surgery of the Gall-Bladder and Bile-Ducts. H. Upcott.
23 Chronic Gonorrhœa in the Female. C. D. Lochrane.
24 *Breast Pang. H. W. Verdon.

16. **Polypoid Sarcoma of the Nose.**—Under this term Madden describes a tumor whose structure is that of sarcoma, but of such a low grade of malignancy as to produce comparatively little surrounding destruction, after a prolonged period of growth. Clinically, the sequence of symptoms appears to be polypous formation in both nostrils, leading soon to complete nasal obstruction; expansion of the cartilaginous portion of the nose, with marked hypertrophy of the overlying skin; and, later, marked thickening and infiltration of the columella and upper lip, with, finally, but only after a very chronic course, extension to surrounding parts.

18. **Failure of Heart.**—Colbeck maintains that in spite of the extravagant advocacy of hydrotherapy and special exercises in the treatment of cardiac failure, there is no therapeutic influence that compares in efficacy with physical and mental rest. The carrying out of this principle does not necessarily entail complete rest in bed; each case must be considered in the light of surrounding conditions with the object of ensuring a maximum of relief to the heart with a minimum of disturbance to the patient.

The duration of the period of rest is determined by the response of the heart to this method of relieving the ventricle of its overwork, and it is of the utmost importance that the resumption of exercise should be graduated with the greatest nicety and caution, since a small indiscretion in respect to the introduction of strain may undo the beneficial effects of weeks of treatment. Drugs have little or no direct influence for good in the treatment of failure of the heart due to exhaustion of the function of contractility without loss of tonus, and their indiscriminate use may be a source not only of harm, but of actual danger. So long as the cardiac tonus is maintained, the employment of digitalis and its allies is absolutely contraindicated. The justification, if any be needed, for the occasional hypodermic injection of digitalis during an emergency in the treatment of cardiac failure without loss of tonus is apparently found in the initial effect of the drug on the function of contractility. With this exception, he declares, the action of digitalis in cases of cardiac failure without loss of tonus is wholly deleterious. The harmful effects of the drug are most commonly observed in those cases of failure of the heart without loss of tonus that are not uncommonly found in association with high blood-pressure and cardiovascular sclerosis. In these circumstances, the failing function of contractility is working up to the full limit of its reserve power, and the introduction of any depressing factor, such as a full meal, a slight effort or the action of digitalis, may be sufficient to cause sudden stoppage of the heart. In failure of the heart with loss of tonus, the very remarkable restoration of the cardiac tonus that is commonly effected by digitalis enables the heart to regain control of the collection and discharge of its contents, and thereby to reestablish the balance of the circulation.

So long as the heart is dilated digitalis may be given with safety and confidence, and the administration of the drug in suitable cases of cardiac failure constitutes one of the most satisfactory examples of therapeutic intervention in the whole range of clinical medicine. Failure of the heart to respond to the action of digitalis implies either permanent dilatation of the organ, due to the stretching of a texturally altered myocardium, or to grave functional degradation (consequent on toxemic poisoning, etc.) of the cardiac wall.

24. **Breast Pang.**—Cases not infrequently come under notice in which the prominent symptom complained of is dull pain of an intolerable sort felt in the upper third of the chest, sometimes extending to one or both arms, and sometimes rising in the neck as far upward as the angles of the jaw. Usually, at first, the pain comes on when the patient is walking on rising ground. In later stages and in severe cases it begins before 50 yards of level ground can be covered. Verdon has seen a few cases in which the patient could not walk from one side of the room to the other without provoking a seizure. The attack is accompanied by a small, quick, irregular pulse, extreme pallor, and a sense of inability and distress. Sometimes a feeling of gastric distention precedes the painful sensation, and eructation of flatus relieves

them. With a few exceptions these cases are uncomplicated by the presence of constitutional disease or any discoverable local lesion. Verdon shows that there are reasons for the inference that contraction of involuntary muscles of the arterial wall occurs during these attacks, and that contraction of arterial muscle is the cause of the pain and other phenomena connected with the seizure.

Journal of Laryngology, Rhinology and Otology, London

March

25 Paralysis of the Recurrent Laryngeal Nerve. J. Broeckaert.

The Australian Medical Journal, Melbourne

January

26 Work done at the Women's Hospital, Melbourne. G. Cuscaden.
27 Scarlet Fever and Diphtheria. F. V. Scholes.
28 Radium and its Application. H. Lawrence.
29 Impressions of American Surgery. T. Murphy.
30 Three Cases of Calculi. O. Penfold.

Annales de Gynécologie et d'Obstétrique, Paris

February, XXXVII, No. 2, pp. 65-128

31 *Serodiagnosis of Pregnancy. (De la possibilité d'une toxémie villeuse et d'un séro-diagnostic de la grossesse, dans les premiers mois de la gestation.) G. Fieux and P. Mauriac.
32 *Acute Thyroiditis in Puerperal Infection. P. Lecène and Metzger.
33 *Hemostasis in Hysterectomy. (L'hémostase dans l'hystérectomie abdominale totale, l'hystérectemie subtotale ou en deux temps.) L. Chevrier.

31. Early Serodiagnosis of Pregnancy.—Fieux and Mauriac report research which seems to demonstrate that the young chorionic villi have a toxic action which induces the production of an antibody that can be revealed by the deviation of the complement in the hemolytic test. The vigorous growth of the chorionic villi during the first weeks of pregnancy seems to suggest that they possess certain features of a true parasitic graft, which may grow to a malignant tumor when the attack is too lively or the defense inadequate. This idea of syncytium intoxication from deportation of villi has been suggested as the origin of eclampsia. But the accidents due to the autointoxication of pregnancy are more severe as term approaches, while the growth of the villi becomes less and less active as the pregnancy continues. These and other facts observed suggest, they believe, that the villi may be responsible for the early toxemia; this assumption is sustained by the fact that the disturbances which mark the onset of gestation occur early; they disappear suddenly and completely if the ovum is expelled, extracted or dies; they subside and generally vanish completely by the close of the third or fourth month, but they may persist and with exceptional intensity in certain pathologic conditions of the ovum, with a vesicular mole, for instance. This, the authors assert, confirms the fact that in this toxemia the ovum rather than the embryo is concerned. In their experience, it was not in true pregnancy, but in cases of vesicular mole with proliferation of the villous element that the vomiting and cachexia were most pronounced. They apply the hemolytic test with an antigen made from villous masses derived from a two-months human ovum, taken from a patient with uncontrollable vomiting. With this and similar antigens they tested 55 pregnant women and obtained positive results in every case of pregnancy of two or three months' duration. The findings were negative in all the cases of pregnancy under one month and over four as also in 10 non-pregnant women, the latter including several with amenorrhea suggesting a possible pregnancy. The research described seems to establish, they think, the existence of an actual villi toxemia with a biochemical reaction permitting a serodiagnosis of pregnancy during the second and third month.

32. Acute Thyroiditis in Puerperal Infection.—Lecène and Metzger report a case in which a suppurative process developed in the thyroid a few days after delivery. The patient was 41 years old, a vii-para, and there had never been any disturbance in the thyroid. Prompt recovery followed incision and drainage of the abscess. A streptococcus was found in the lesion, the puerperium having been febrile. In a number of cases summarized from the literature the thyroiditis subsided under mild medical measures; in some cases the disturbances were ascribed to sore throat. The connection between the thyroid and the genital apparatus explains, they remark, the peculiar susceptibility of the thyroid to infection during the puerperium.

33. Hemostasis in Hysterectomy.—Chevrier gives an illustrated description of the technic which he advises, showing how to incise the vagina, etc., in regions free from blood vessels.

Annales de l'Institut Pasteur, Paris

January, XXIV, No. 1, pp. 1-80

34 *Agglutination and Seroreaction in Sporotrichosis, Actinomycosis and Thrush. (Sérodiagnostic mycosique. Applications au diagnostic de la Sporotrichose et de l'Actinomycose' Les conggllutinations et cofixations mycosiques.) F. Widal, P. Abrami, E. Joltrain, E. Brissaud and A. Weill.
35 Serotherapy in Cholera. (Le choléra à Saint-Petersbourg.) A. T. Salimbéni.
36 *Seventh Annual Campaign against Malaria in Algiers. (Etudes épidémiologiques et prophylactiques du paludisme.) E. and E. Sergent.

34. Agglutination and Seroreaction in Mycoses.—It seems evident from the research and experience reported that it is possible to differentiate actinomycosis by agglutination and the fixation of complement test using for the purpose spores of the sporotrichum; the actinomyces does not respond to the tests but there is a generic reaction with the spores of the allied sporotrichum. The latter can be easily cultivated and separated. The reactions also occur constantly in thrush with these spores, but there is no reaction in ringworm or aspergillosis.

36. The Campaign Against Malaria.—Sergent estimates the intensity of malaria in a place by what he calls the endemic index, that is, the percentage of malarial individuals who have much enlargement of the spleen. He here reviews the systematic campaign against malaria in Algiers in 1909.

Annales des Mal. des Org. Génito-urinaires, Paris

January 15, XXVIII, No. 2, pp. 97-192

37 *Urethral Stricture. (Traitement des rétrécissements de l'urétre.) Batut.
38 *Calculi in the Ureter. (Des calculs de l'uretére.) E. Jeanbrau. Commenced in No. 1.

February 1, No. 3, pp. 193-288

39 *Chyluria. G. Marion.
40 Pathology of the Posterior Urethra. Michailoff.
41 *Circular Electrolysis. (Nouveaux procédés d'électrolyse circulaire.) L. V. Girolamo.
42 *Six Cases of Retrograde Catheterization of the Urethra. (Cathétérisme rétrograde hypogastrique.) M. Hache.

37. Urethral Stricture.—After reviewing the field in general, Batut reports the details of six unusual cases from his own experience as army surgeon. In one an obstinate stricture in the anterior urethra was the result of infection after circumcision; in another the stricture was due to a probably congenital membranous growth. Urethrotomy, both internal and external was required in all but one case in which linear electrolysis answered the purpose, with progressive dilatation for a recurrence ten years later.

38. Stone in the Ureter.—This profusely illustrated article is an abridgement of an address prepared for the last French urologic congress. Jeanbrau has compiled 239 cases of calculi in the ureter removed by operative intervention or expelled after catheterization (53 cases). Immediate and complete recovery can be counted on, he states, if the patient is capable of bearing general or spinal anesthesia and the operation is not done during anuria. A fistula need not be apprehended if the permeability of the ureter throughout its entire length is determined after extraction of the calculus. The mortality in the cases on record was 1.66 per cent. In examining, after subsidence of the attack of pain, a tender point should be sought along the ureter above or near the umbilicus, at the intersection of a vertical line passing through McBurney's point and a horizontal line passing through the umbilicus; a second tender point is at the intersection of a line uniting the crests of the ilium and a vertical line through the pubis. The point where the ureter enters the bladder is also liable to be tender. In only 2 cases was the calculus discovered by abdominal palpation, but palpation through the vagina usually gave instructive findings, especially when the patient was examined standing. In 13 cases the calculus was palpated through the rectum. In 29 cases cystoscopy permitted the true diagnosis when the symptoms seemed to locate the trouble in the kidneys or bladder. In all the cases reviewed recurrence was known in

only a single instance and this may have been merely that a stone was overlooked at first.

39. **Chyluria.**—Marion's patient was a man of 58 who had had gonorrhea in youth and occasional bronchitis. Recently the night urine has appeared milky and he has lost 23 pounds in weight. The day urine is clear but on reclining the urine is at once milky. The milky urine always comes from the right ureter. Bacteriologic tests are negative and there is nothing to suggest the possible presence of filariosis. A fistula from rupture of a lymphatic into the urinary passages is probably the most frequent cause, although secretory renal chyluria is not an impossible assumption. This case seems to favor the assumption of a communicating fistula, and treatment along this line has been instituted, a silver nitrate solution being instilled into the ureter and renal pelvis to promote the healing of the assumed fistula.

41. **Circular Electrolysis in the Urethra.**—Girolamo has found that the negative electrolysis has first a vasoconstricting and then a vasodilating action, followed by the formation of a soft eschar. The tissues of the urethra soften and become permeable for the cauterizing action on the points influenced by the electrode. The olive-shaped metal electrode should be a little larger than the largest caliber sound that can pass through the stricture; immediately after the electrolysis he introduces other electrodes, of increasing caliber, having a set of olive-shaped tips of various sizes. The urethra should be cocainized beforehand and the current should not be over 5 or 6 milliamperes during the five minutes it is used. After the dilatation he massages the region of the stenosis still under the influence of the current. This forced and rapid dilatation, he asserts, puts an end to the retention and hastens the cure. The electrolytic action is limited to the spot where it is needed, and can be done with and without the endoscope. The superposed massage utilizing the electrolytic ionization is an important factor in the rapid cure.

42. **Retrograde Catheterization of the Urethra.**—Hache reports 6 cases interesting from the multiplicity and severity of the lesions. In 2 cases there was a sliver of bone in the urethra from a fracture of the pelvis; in one the prostatic urethra had been torn out; in another 2 accidents at 20 years' interval involved the urethra; there was also a calculus in it.

Annales de Médecine et Chirurgie Infantiles, Paris

February 1, XIV, No. 3, pp. 73-108

43 *Spasmodic Paraplegia in Children with Inherited Syphilis. (Forme de paraplégie spasmodique d'origine hérédo-syphilitique chez l'enfant.) A. B. Marfan.
44 Blood in the Stools in Pathology of the Intestines in Young Children. (Recherche du sang dans les selles en pathologie intestinale.) H. Triboulet.
45 Staphylococcus Scarlatinal Meningitis. E. Weil and G. Mouriquand.

43. **Spasmodic Paraplegia in Children with Inherited Syphilis.**—In the case described by Marfan, the patient was a boy nearly 9 years old who was able to walk very slowly without support, but with a dragging gait, balancing himself first on one foot and then on the other. The entire limb was stiff, the hip, knee and ankle scarcely bending at all, the toes dragging and hitting against obstacles and the knees touching. He can walk in a straight line, however, without staggering, and closing the eyes does not increase the trouble in walking. When reclining, the paraplegia is less marked, and passive movements of the joints are possible. The tendon reflexes are exaggerated, and the Babinski and other signs indicate some lesion in the pyramidal tract in the dorsolumbar spinal cord. There are no sphincter disturbances or trophic lesions but the Argyll-Robertson sign is positive and the child is mentally backward. Marfan ascribes the trouble to inherited syphilis and advises commencing specific treatment at once in such a case without waiting for certainty as to the inherited taint. In his case treatment was not commenced until fifteen months after appearance of the first symptoms, and this delay was probably responsible for the entire lack of improvement under energetic mercurial treatment for eighteen months. The diagnosis was first rendered certain in this and another case by development of parenchymatous keratitis; this soon subsided under the specific treatment. The paraplegia in question generally develops late, at the age of 4, 5, 7 or 12 years in the cases he has encountered. The affection is much like that of syphilitic spinal paralysis in adults except that the sphincters do not seem to be affected.

Archives des Mal. de l'App. Digestif, Paris

January, IV, No. 1, pp. 1-48

46 *The Mathieu Indirect Method of Estimating Amount of Stomach Content. (Valeur de la méthode Mathieu-Rémond pour la détermination indirecte du volume de liquide contenu dans l'estomac.) A. Mathieu and Taillandier.
47 Coexistence of a Basement-Celled Epithelioma in the Esophagus and a Cylinder-Celled Epithelioma in the Stomach. (Les cancers multiples du tube digestif.) E. Parmentier and E. Chabrol.
48 *Parotitis during Medical Treatment of Gastric Ulcer. (Des parotidites survenant au cours de la "cure de repos stomacal absolu.") R. Gaultier.

46. **The Mathieu Method of Determining Amount of Stomach Content.**—Mathieu states that the experiences of the fifteen years since he introduced this method have confirmed its reliability. The principle is the comparison of the degree of acidity of the stomach content before and after dilution with a given amount of water. Laboulais and Goiffon have recently simplified the technic considerably. They use a titrated solution of sodium phosphate; after this is poured into the stomach and well mixed with the contents they withdraw some, and from its dilution then they estimate the amount of fluid present in the stomach.

48. **Parotitis During Treatment for Gastric Ulcer.**—Gaultier has encountered 2 cases of bilateral parotitis developing during dietetic treatment of gastric ulcer. He has found records of 21 other cases, including 4 with suppuration, fatal in 2 cases; one of his patients was in this last group. The suppression of the salivary secretion is manifestly the cause of infection of the glands, and during withdrawal of all food by the mouth measures must be maintained to keep the salivary glands functioning, or the contents of the excretory duct may be massaged out several times a day. Expression of this duct has recently been recommended in treatment of infectious angioparotitis, and it probably would prove effectual in prophylaxis. Merely keeping the mouth moistened and giving the patient scraps of ice have not proved effectual alone.

Archives de Médecine des Enfants, Paris

February, XIII, No. 2, pp. 81-160

49 *Pathogenesis of Rachitis. (Le rachitisme.) V. Hutinel.
50 *Study of the Temperature in Scarlet Fever. (Thermosémiologie de la scarlatine.) J. Barannikow.
51 The Deceptive Abdominal Onset of Certain Diseases of Children. (Cas de rougeole débutant par des symptomes abdominaux.) Oelsnitz.
52 Roseola in Cerebrospinal Meningitis. E. Merle.

49. **Rachitis.**—Hutinel regards a quantitative modification of the bone marrow as the essential feature of rickets. The qualitative changes are like those encountered in ordinary infections, he states, but the remarkable proliferation of the bone marrow seems to be specific for rachitis. The bone tissue also displays a tendency to evolutive dystrophy, which is also evident, although to a lesser degree, in all the tissues. This dystrophy may even involve the suprarenals, thymus, etc., but the anomalies in the glands may be regarded as the result of the nutritional disturbance responsible for the bone lesions, rather than as themselves the cause of the rachitis. The dystrophies that develop at puberty are akin to those in young children, both being in periods of exceptionally active nutrition. Pregnancy is another such period, and dystrophies are also liable to occur at these times, but they do not take the form of rachitis but of osteomalacia; the lesions are different according as the tissues are immature or adult. The primal disturbance responsible for the rachitis may include microbian, toxic and dystrophic factors, associated or superposed. For example in a child with a tendency to rachitis from defective feeding, other causes, such as an intercurrent infection, may conspire to aggravate this tendency.

50. **Study of Temperature in Scarlet Fever.**—Barannikow believes that it is possible to determine the prognosis early in scarlet fever by the temperature curve, and he gives the findings in 209 cases, comparing them with the composite

curves made out retrospectively from the mild, the moderate and severe cases. A deep fall in temperature between the third and thirteenth day was characteristic of every epidemic observed. It may occur suddenly or the temperature may be two or three days in declining. This fact is important in estimating the action of serotherapy. In his experience, scarlet fever developing in the course of whooping cough was always exceptionally mild. He could not discover any connection between the duration of the fever and heart complications, but such was unmistakable between inflammation of the tonsils and the heart complications as well as with the general symptoms—all being more severe the more intense the tonsillitis, but no connection of the kind could be discovered with the nephritis.

Lyon Chirurgical, Lyons

February, III, No. 2, pp. 129-256

53 *Research on Anatomy of the Small Intestine and its Mesentery. (Notes d'anatomie sur l'intestin grêle et le mesentère.) A. Latarjet.
54 *Echinococcus Disease of the Lung. (Kyste hydatique double du poumon droit.) H. Albertin and F. Barjon.
55 *Eight Cases of Laryngostomy with Dilatation. C. Viannay. Commenced in No. 1.

53. **Anatomy of the Small Intestine and Mesentery.**—Latarjet gives an illustrated description of various points in regard to the anatomy of the small intestine and its mesentery, seeking to locate the special loop of the intestine under examination and its possible torsion from the findings in regard to the arteries and veins and fat deposits.

54. **Echinococcus Cyst of the Lung.**—In the case reported one cyst was in the apex and another in the base of the same lung; both were readily shelled out, with the complete recovery of the patient, a woman of 40. She had suffered from cough and labored breathing for about six months; after three months revulsion had been applied to the chest for pleurisy. She had lost nearly 25 pounds in weight but there were no night sweats and no pain until the last two weeks when there had been intermittent sharp pains in the right side and liver region. Roentgen-ray examination revealed the two tumors, and first one and then the other, ten months later, were successfully removed, two or three ribs being resected each time. There was a history of urticaria seven years before, and this first suggested the possibility of echinococcus disease; the urticaria may have been due to elimination through the skin of the poisons generated by the parasite in the blood, the elimination ceasing as the parasite located in the lung and became encysted. There was no hemoptysis at any time.

55. **Laryngostomy with Dilatation.**—All of Viannay's 8 patients are in good health to date except that one patient succumbed to an accidental pneumonia six months later. He reviews the cases in detail with the technic. He prefers to close the wound definitely at once when possible.

Lyon Médical, Lyons

February 6, XLII, No. 6, pp. 269-336

56 *Diagnosis and Prognosis of Uremia by Amount of Urea in the Cerebrospinal Fluid. J. Froment.

February 13, No. 7, pp. 337-392

57 Treatment of Vaginal Cystocele or Preuterine Hernia. H. Violet.

56. **Urea Content of Cerebrospinal Fluid in Uremia.**—Froment tabulates the findings in regard to the proportion of urea and chlorids in the different organic fluids in 18 cases of various affections with more or less uremia. Of all the changes in the cerebrospinal fluid in case of uremic poisoning of the nervous system, an increase in the proportion of urea is the most constant and the most instructive. Even 1 per cent. is suspicious, but with more than this, uremia is beyond question, and with 4 per cent. the prognosis is inevitably fatal. The uremia is seldom fatal when the proportion is only 1 or 2 per cent., except possibly in children with acute nephritis. The urea content in the other organic fluids is less constant and not characteristic.

Presse Médicale, Paris

February 23, XVIII, No. 16, pp. 137-144

58 Tuberculosis in Origin of Rachitis. (Rachitisme et Tuberculose.) A. B. Marfan.
59 Dosage of Suprarenal Preparations. (Posologie de l'adrénaline.) L. Bernard.

Revue de Médecine, Paris

February, XXX, No. 2, pp. 81-152

60 *Scarlet Fever. (La scarlatine à l'hôpital Claude-Bernard in 1908. II.). A. Gouget.
61 *Hemophilia III. P. Nolf and A. Herry.
62 Farm Colonies for Epileptics, etc. (L'assistance spéciale des épileptiques et débiles adultes par le retour à la terre.) A. Marie.
63 Distribution of Sugar in Elements of Diabetic Blood. (Repartition du sucre dans le plasma et les globules du sang chez un diabétique.) R. Lépine and R. Boulud.

60. **Scarlet Fever.**—Gouget describes the erosive or ulcerative type of sore throat which he encountered in 48 of the 858 cases of scarlet fever at the isolation hospital in 1908. In the 28 cases with ulceration, 11 of the children died and the survivors all developed otitis or other serious complication. No local measures displayed any efficacy. He also reviews the other complications observed. The total mortality in the 858 cases was 30.

61. **Peptone to Arrest Hemophilic Hemorrhage.**—In 9 cases hemophilic hemorrhage was arrested by injection of 10 c.c. of a 5 per cent. solution of peptone (Witte). In some of the cases 2 injections were made as a prophylactic measure the first 10 and the second 2 days before a major operation. In one case hematuria was arrested by one injection; the patient succumbed to hematemesis a year later. The patients were between 6 and 67 years old, and a single injection answered the purpose in nearly every case. The peptone seems to be more energetic and it is more easily sterilized than serum; heating to 120 C. (248 F.) for an hour does not alter its properties. It is injected as a 5 per cent. solution in a 0.5 per cent. solution of sodium chlorid. There seems to be no danger of anaphylaxis. For local application an extract of lymphoid organs, spleen, lymph glands and thymus, seems to be as effectual as fresh serum. The extract can be made with organs from the slaughter-house by triturating them with a little sand, adding to 1 part of the gland 2 parts of a 0.09 per thousand sodium chlorid and 0.5 per thousand calcium chlorid solution, and then straining. The action and effect of the peptone seems to be identical with that of fresh serum, but judging by the experiences to date, the authors state, the action seems to be much more pronounced.

Semaine Médicale, Paris

March 2, XXX, No. 9, pp. 97-108

64 *Advisability of Surgical Intervention for Cystic Degeneration of the Kidney. (Faut-il opérer le rein polykystique?) F. Lejars.
65 *Is Hegar's Sign Pathognomonic of Pregnancy? (Le signe de Hegar est il pathognomonique de la grossesse?) R. de Bovis.

64. **Indications for Operation in Cystic Degeneration of the Kidney.**—Lejars regards nephrectomy as justified in case of suppuration, pain, hematuria or intracystic hemorrhage, if the condition of the other kidney permits. Cystic degeneration is generally bilateral but it may be in an initial stage in the second kidney and thus allow long survival after the nephrectomy, as the process is of very slow development. Unless there are severe symptoms, however, he does not advise nephrectomy as the kidney may retain for many years functional capacity sufficient to ward off severe symptoms even when in advanced cystic degeneration. He removed three years ago a polycystic tumor which he supposed was the kidney but which proved to be of pararenal origin; both kidneys were also in polycystic degeneration as was discovered at autopsy not long afterward. Differentiation even during the operation may be difficult. In another case he found a knobby, blackish cystic tumor originating in the lower end of the kidney. Supposing that the trouble was general cystic degeneration of the organ, and not knowing the condition of its mate, he did not dare to remove the kidney but resected it into sound tissue and the patient recovered. The tumor proved to be an epithelioma. Palliative operations on cystic kidneys are attended with great risks, he declares, and should never be done except under compelling indications, but then may give great relief.

65. **Hegar's Sign of Pregnancy not Reliable.**—De Bovis asserts that softening of the isthmus of the uterus cannot be regarded as pathognomonic of pregnancy as it has been encountered with a myomatous uterus. The softening may vary widely in intensity, extent and location. Hemorrhages should not be accepted as evidence for or against the presence

of a myoma. In three cases in his experience the women had hemorrhages more or less continuously for one, three and five months and were then delivered of a dead or living fetus; no trace of a myoma could be discovered.

Deutsche medizinische Wochenschrift, Berlin

February 24, XXXVI, No. 8, pp. 345-392

66 *"Inflammatory" and "Real Lithogenous" Jaundice. (Entzündlicher und reell-lithogener Ikterus.) B. Riedel.
67 *Collective Investigation by the Imperial Health Office on Tuberculosis from Milk. (Die Sammelforschung des Kaiserlichen Gesundheitsamtes über Milchgenuss und Tuberkulose.) H. Kossel.
68 Transformation of Biologically Important Properties of Bacteria. (Beobachtungen über die Umwandlung biologisch wichtiger Eigenschaften von Bakterien.) G. Sobernheim and E. Seligmann.
69 Psychosis from Meat Poisoning. (Fall von Psychose nach Fleischvergiftung.) M. Raether.
70 Paratyphoid Bacilli and Meat Poisoning. (Paratyphusbazillen und Fleischvergiftungen.) H. König.
71 *Influencing of Cardiac Neuroses by Cauterization of Nose. (Zur nasalen Beeinflussung der Herzneurose.) A. Koblanck.
72 To What Extent can Local Supplant General Anesthesia? (Inwieweit vermag bereits jetzt die Lokalanästhesie die Allgemeinnarkose zu ersetzen?) F. Hesse.
73 Modified Technic for Stovain Spinal Anesthesia. (Ein neues Verfahren bei Anästhesie durch Rhachistovainisierung.) A. Poenaru.
74 Behavior of Placenta and its Manual Separation. (Verhaltung der Plazenta und ihre manuelle Lösung.) Naumann.
75 Seroreaction in Cadavers. (Leichensera und die Wassermannsche Syphilisreaktion.) R. Krefting.

66. Inflammatory and Lithogenous Jaundice.—Riedel emphasizes the necessity for differentiating jaundice resulting from the presence of stones in the gall-bladder or cystic duct, which he calls the inflammatory form, and that resulting from a stone in the common bile duct, the real lithogenous form. He cites a number of examples to confirm his assertion that a patient with inflammatory jaundice cannot be operated on too quickly; a stone in the neck of the gall-bladder or in the cystic duct may be pushed along into the common bile duct, so that out of the hitherto harmless local affection a general disturbance may result. On the other hand, the patient with the real lithogenous jaundice should not be operated on at once at the first attack; the stones may be passed without further trouble. Only exceptionally serious infection compels immediate surgical intervention. In his experience with 600 operative cases of jaundice, in 80 per cent. of the cases the first attack of gall-stone colic was due to hydrops or infected hydrops in the gall-bladder; in 20 per cent. bile was found in the gall-bladder. About 57 per cent. of the patients had a primary large stone in the neck of the gall-bladder or cystic duct; in 43 per cent. there were numerous small stones. In about 90 per cent. of the cases in which the stones remained quietly in the bladder or cystic duct there was no jaundice. The majority of patients thus have no jaundice at their first attack of gall-stone colic, but in 10 per cent. of such cases there is jaundice even when the stone remains in the neck of the gall-bladder or in the cystic duct. The jaundice in this case is of inflammatory origin, although generally aseptic. It is the result of propagation of an inflammation from the gall-bladder to the liver. If the stone is high up in the cystic duct, it may compress and kink the lower biliary passage, thus superposing a mechanical element on the inflammation. In conclusion he reiterates that patients with violent attacks without jaundice and without passage of stones, and those with inflammatory jaundice should be operated on during the attack. With the real lithogenous jaundice commencing independently, conservative treatment is indicated unless severe infection compels rapid intervention.

67. Abstracted in the Berlin Letter in THE JOURNAL, March 12, 1910, page 886.

71. **Influencing of Cardiac Neurosis by Correction of Anomalies in the Nose.**—Koblanck gives the description of a case written by the patient himself, a physician, aged 31, who had suffered for years with a cardiac neurosis with attacks simulating angina pectoris. Removal of some polyps in the nose and electrolytic correction of an abnormal protruding part of the septum were followed by complete subsidence of all the trouble. The young physician had become convinced by his symptoms that a large part of them were due to participation of the sympathetic system. The benefit from direct treatment of the sympathetic fibers in the nose confirms this.

Fortschritte der Medizin, Leipsic

February 10, XXVIII, No. 6, pp. 161-192

76 *Menthol in Treatment of Pulmonary Tuberculosis. Stepp.

76. **Menthol in Pulmonary Tuberculosis.**—Stepp gave the menthol internally at first, but with disappointing results. Since then he has applied it in the form of inunctions, and reports good results. He uses a 30 or 40 per cent. menthol salve. Some of the salve is rubbed into the skin for ten minutes until it is entirely taken up, a different part of the body being anointed each time. He has never observed any inconveniences from the method but found benefit follow in the 14 cases in which he has applied this method of treatment perseveringly for four or five months. He gives the details of the cases. Improvement is evident, he asserts, after two or three weeks and continues to progress until the patients are practically cured, except in the more advanced cases and improvement is evident in every case. Acute tuberculosis either of lungs, glands, or bones, is not amenable to this treatment, but it is effectual in the infiltrations left after acute pneumonia in children. These relics of the pneumonia are generally tuberculous processes, and they yielded rapidly and completely to the menthol treatment in his 18 cases of this kind. He explains the action of the menthol as due to its elimination by the lungs after it has been taken up by the lymphatics; this enables it to act directly on the tuberculous tissue in the lungs. As this is absorbed, the walls of the cavity may sink in and the cavity thus become obliterated. It is even possible that a kind of autoimmunization may follow.

Medizinische Klinik, Berlin

February 20, VI, No. 8, pp. 293-330

77 Hypnotics and their Action. (Ueber Schlafmittel und ihre Wirkung.) S. Fränkel.
78 Pathogenesis of Otitic General Infection. W. Uffenorde.
79 Action of Iodin. (Ueber Jodwirkung.) A. Heffter.
80 Acute Articular Rheumatism after Operative Trauma of Nasal Mucosa. (Gelenkrheumatismus nach operativem Trauma der Nasenschleimhaut.) M. Senator.
81 Improved Roentgen-Ray Technic. (Funkeninduktor und Wechselstrommaschine zum Betriebe von Röntgenröhren.) F. Dessauer.
82 Advantages of Rubber Ball Pessary in Treatment of Prolapse of the Vagina. (Ueber ring- und kugelförmige Pessare bei der Behandlung des Scheidenvorfalls.) M. Wunsch.

Monatsschrift für Kinderheilkunde, Leipsic

January, VIII, No. 10, pp. 585-656

83 Yolk of Egg in Infant Feeding. (Bedeutung der Eier als Bestandteil der Säuglingsernährung.) H. Vogt.
84 Congenital Bronchiectasia. J. Peiser.
85 Artificial Feeding of New-Born Infants. (Einiges über künstliche Ernährung von Neugeborenen im Spital und im Privathaus.) B. Schelble.
86 Fetal Fat. (Zur Kenntnis des Fötalfettes.) Engel and Bode.

Münchener medizinische Wochenschrift

February 22, LVII, No. 8, pp. 393-440

87 *Typhoid with Initial Hemorrhagic Exanthem. H. Curschmann.
88 *Congenital Diffuse Hydrops. (Angeborene allgemeine Wassersucht.) H. Schridde.
89 *Effect of Momburg Belt Constriction on the Ureters. (Ueber die Komprimierbarkeit beider oder nur eines Ureters mittelst elastischer Einschnürung des Abdomens.) O. Hochne.
90 *Prophylaxis of Caries of the Teeth. (Zur Prophylaxe der Zahnkaries.) W. Herrenknecht.
91 *Change in Drop-Forming Property—the Meiostagmin Reaction—with Cancer. (Die Meiostagminreaktion bei bösartigen Geschwülsten.) M. Ascoli and G. Izar.
92 *Behavior of Pupils in Young Infants. (Verhalten der Pupillen beim Neugeborenen und im ersten Lebensjahr.) H. Gudden.
93 Hemoglobinometer. ("Der Kolbenkeilhämoglobinometer," ein neuer Apparat zur funktionellen Hämoglobinbestimmung.) J. Plesch.
94 Toxic By-Effects of Arsacetin, Especially its Irritating Action on the Kidneys. (Die toxischen Nebenwirkungen des Arsazetins, insbesondere die Nierenreizungen.) H. Borchers.

87. **Family Typhoid with Initial Hemorrhagic Exanthem.**—Curschmann reports the case of a mother and six children all coming down with typhoid at the same time and presenting on the second or third day a sudden eruption of petechial spots. The typhoid was mild and there was nothing to suggest true exanthematous typhus. The father of the family developed the disease two or three weeks after the others, with fatal ulceration in the intestines. He presented an eruption of hemorrhagic vesicles. The other patients recovered; constipation had been the rule in all but two.

88. **Congenital Hydrops.**—Schridde has encountered 3 cases in the last 5 years in which a general hydrops was associated with extreme anemia and enlargement of the heart. In 2 of

the cases the mothers had had severe nephritis. He is convinced that many cases which have been reported as pseudoleukemic anemia in an infant, have in reality been of this type. Examination of the blood in cases of congenital edema may throw further light on the condition.

89. **The Momburg Belt Constriction for Segregation of the Urine.**—Hoehne found that it is possible by applying a splint over half of the abdomen to protect this half against constriction by the rubber tubing wound around the waist according to the Momburg technic. This allows the ureter on the protected side to continue its functions undisturbed, while the ureter feeling the constriction is closed. This permitted instructive oversight of the functioning of the kidney and ureter on the protected side in rabbits, and suggests the possibility that the method may prove useful in clinical diagnosis. He found that the compression of the ureter by the Momburg belt induced injury of the kidney, with albuminuria and tube casts. These disturbances were transient in a case reported in detail in which the belt was applied for the purpose of inducing abortion. The latter was not realized, showing that the constriction does not shut off all the blood supply from the genital apparatus. The transient injury of the kidneys observed in this case suggests possible danger from this source if the constriction is kept up for a long time; half an hour should be the average.

90. **Care of the Teeth.**—Herrenknecht reviews bacteriologic research which shows that the normal baeterial flora in the mouth protects against the invasion of pathogenic germs under normal conditions. The bacteria do not injure the teeth unless their products are allowed to accumulate, in which case the acids generated by the bacteria cause the destruction of the teeth. The main point in the care of the teeth is therefore to insure the mechanical removal of these products and everything that may serve as nesting places for the bacteria. The most important measure is to rinse out the mouth with water or a weak salt solution; warm water is much more cleansing than cold. No bactericidal drugs are needed; they do direct harm as they injure the tissues; all that is necessary is the mechanical, forcible rinsing out of the mouth several times in succession after each meal. If a mouth wash is desired to aid in cleansing, and to leave a refreshing taste in the mouth, he prescribes a mixture of 0.2 part saccharin and 0.3 part peppermint oil in 100 parts alcohol. From 10 to 20 drops are to be added to a glass of warm water and the whole amount used to rinse the mouth. He rejects tooth powders as liable to injure the teeth from hard particles. Soap also has an injurious action. He advises having the teeth inspected several times a year after the age of three, and protests against pulling a molar or premolar tooth in a child's mouth; if absolutely necessary, the antagonist should be pulled too. This should be the rule up to the age of 18; the jaws will then develop symmetrically. Adults should have the teeth examined twice a year and in some cases oftener.

91. **The Meiostagmin Drop-forming Reaction in Cancer.**—Ascoli reports positive results in tests of the drop-forming property of the serum in cancer. In 29 cases of carcinoma and 2 of sarcoma there was a difference of from 4 to 8 drops after addition of the specific antigen, while in 28 control cases the number of drops showed no change. The meiostagmin reaction may thus prove a reliable sign of malignant disease if the experience of others confirms his findings.

92. **The Pupils in Young Infants.**—Gudden calls attention to the sudden and maximal dilatation of the pupils on sudden waking from sleep as a psychic reflex, possibly possessing some differential value for cortical affections, especially in infants.

Wiener klinische Wochenschrift, Vienna

February 24, XXIII, No. 8, pp. 274-308

95 Pharmacology and Clinical Medicine. (Pharmakologie und Klinik.) O. Loewi.
96 Primary Multilocular Echinococcus Disease in the Brain. (Ein primärer mehrherdiger Echinococcus multilocularis alveolaris des Gehirns.) E. v. Hibler.
97 Bacteriology of Urethritis in which no Gonococci can be Found. (Zur Aetiologie der gonokokkenfreien Urethritis.) K. Lindner.
98 Adrenalin not an Antidote to Strychnin. H. Januschke.
99 Dangers of Intravenous General Anesthesia. (Ueber die intravenöse Narkose.) P. Clairmont and W. Denk.
100 Special Action of Extracts of Tuberculous Guinea-Pig Organs. (Besondere Wirkung der Extrakte tuberkulöser Organe des Meerschweinchens.) R. Kraus and R. Volk.
101 Connection between Seroreaction and Mercurial Treatment in Syphilis. E. Epstein and E. Pribram.

Zentralblatt für Chirurgie, Leipsic

February 26, XXXVII, No. 9, pp. 313-352

102 *Treatment of Air and Fat Embolism. (Massnahmen bei Luft- und bei Fettembolie.) L. v. Lesser.
103 *Operative Separation of Horseshoe Kidney into two Parts. (Operativer Eingriff bei Hufeisenniere.) A. Martinow.
104 General Anesthesia from Intravenous Injection of Hedonal. (Ueber allgemeine Hedonalnarkose.) S. P. Fedorow and A. P. Jeremitsch.

102. **Treatment of Air and Fat Embolism.**—THE JOURNAL, Feb. 12, 1910, page 576, mentioned Schanz's method of injecting large amounts of salt solution in treatment of fat embolism causing convulsions in the course of orthopedic operations. Schanz explains the disturbances as the result of obstruction of the capillaries of the brain by the particles of fat. The saline infusion washes them along. Now von Lesser calls attention to his experimental experiences with air embolism; he found that the heart was unable to contract over air as the valves are meant to act on fluids and not on air. After the heart action had ceased after injection of air in the jugular vein, he was able to revive it again by direct injection of 0.5 per cent. salt solution directly into the right ventricle.

103. **Operative Separation of Horseshoe Kidney.**—In Martinow's case a nurse, aged 49, had complained since childhood of diagreeable pulsation in the abdomen and for some years had had typical pains above the umbilicus, and also constipation. The nerves had become more and more involved and the patient had been treated for hysteria for some years. Palpation revealed a tumor above the umbilicus, the entire region was very tender; at times the tumor increased in size and the pulsation in the region became more violent. The kidney region was not tender and all the other organs seemed to be normal. On the diagnosis of pancreas tumor or horseshoe kidney the abdomen was opened. The tumor lay on the aorta and united both kidneys. He severed this bridge between the kidneys, between two soft bowel clamps. This released the aorta as the two halves of the kidney separated and all disturbances ceased at once.

Zentralblatt für Gynäkologie, Leipsic

February 26, XXXIV, No. 9, pp. 305-336

105 Treatment of Old Tears in Vagina and Cervix uteri. (Zur Behandlung alter Scheiden- und Cervixrisse.) J. Voigt.
106 Statics of the Human Uterus and Its Gynecologic Consequences. (Die Uterusstatik bei der menschlichen Rasse und ihre gynäkologischen Folgen.) L. M. Bossi.
107 Shaving the Vulva as Preliminary to Delivery. (Der Ruf nach dem Rasiermesser bei der Geburt.) J. Reich.

Zentralblatt für innere Medizin, Leipsic

February 26, XXXI, No. 9, pp. 225-248

108 Substances in the Blood in Nephritis that Induce Mydriasis. (Vorkommen von mydriatisch wirkenden Substanzen im Blute von Nephritikern.) A. Wirz.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 17, XXXI, No. 21, pp. 217-224

109 Typhoid with Circulatory Complications from Infection from Oysters. (Infezione da ostriche.) M. Vivaldi.

February 20, No. 22, pp. 225-240

110 The So-Called Parasyphilitic Diseases. (A proposito delle affezioni cosi dette parasifilitiche.) F. Simonelli.

Policlinico, Rome

February 27, XVII, No. 9, pp. 259-290

111 Successful Pneumotomy for Echinococcus Cyst in Right Lung. E. Curti.
112 *Etiology of Pellagra. L. Verney.

February, Medical Section, No. 2, pp. 49-96

113 Fixation of Complement in Blood Serum and in Effusions as Sign of Tuberculosis. (Studi sul siero di sangue dei tubercolosi e sugli essudati delle cavita sierose a mezzo della deviazione del complemento e dei anafilassi.) C. Frugoni.
114 *Pneumococcus in the Conjunctival Secretion in Acute Lobar Pneumonia. C. A. Crispolti. Commenced in No. 1.
115 *Registration of Respiratory Movements by Influence of Various Gases at Varying Pressure Injected into the Pleura. (Influenza di diversi gas a diverse pressioni sul pneumotorace chiuso.) S. La Franca.

February, Surgical Section, No. 2, pp. 49-96

116 Histopathology of Undescended Testicle. M. Fasano.
117 Behavior of Elastic Fibers in Hernial Sac and Staining Technic. (Comportamento delle fibre elastiche nei sacchi erniari e su di un nuovo metodo pentacromico.) R. Traina.
118 *Efficacy and Mechanism of Action of Bier's Constriction Hyperemia. (Iperemia da stasi alla Bier.) M. Almagia and G. Persichetti.

112. **Etiology of Pellagra.**—Verney emphasizes the fact that in Italy pellagra has followed the introduction and cultivation of maize and also that rainy seasons, with defective development of the grain, are followed by increased prevalence and severity of the disease, and, further, that the use of well dried and healthy maize has reduced materially the incidence of the disease. Another important fact is that the symptoms of the disease are analogous to those observed in other chronic intoxications such as poisoning by lead, phosphorus, arsenic, mercury and alcohol. The analogy is still closer with chronic alimentary intoxication such as from ergot poisoning, chronic favism, the *phlegma salada* of the Spaniards, attributed to spoiled wheat, the cachexia observed in Paris during the last siege, and other chronic disorders due to defective food. At the last Italian neurologic congress, on the other hand, Mondino reported two typical cases of pellagra in persons who had never used maize, and Neusser in Roumania has also encountered individuals with pellagra who had never eaten maize. But Neusser discovered that his patients were in the habit of drinking brandy made from spoiled maize and Antonini confirmed this fact in his experience at Friuli. Verney and also Gosio claim that the theory of spoiled maize does not apply to all the cases of pellagra; some other etiology must be admitted for certain cases, and there is also a probability that a syndrome may be observed closely simulating pellagra which yet is not pellagra. The idea of an intoxication, moreover, Verney continues, seems to be refuted by the persistence of the disease unmodified by avoidance of corn in the diet. No other intoxication is known which does not show a change for the better when the source of the intoxication is withdrawn. The existence of chronic, acute and fulminating cases of pellagra harmonizes better with the conception of an infection rather than an intoxication, even admitting that in certain cases the syndrome may be the result of superposed malaria, typhoid or meningitis. On the whole, he concludes, there is much to sustain the assumption that pellagra is an infection, and a protozoan infection in particular. The toxic and the infectious theories are not antagonistic but reenforce each other. The digestive disturbances induced by the spoiled corn favor intestinal derangement or there may be some toxic element. The resulting syndrome is not pellagra but the condition predisposes to pellagra, as also any other conditions entailing impoverished blood and lowered resisting powers. His conclusions are, therefore, that pellagra is an infection which develops independently when once it gets a hold in a debilitated organism.

114. **The Pneumococcus in the Conjunctival Secretion in Pneumonia.**—Crispolti found pneumococci in the conjunctival secretion in 40 out of 45 cases of pneumonia. They were numerous during the first five days but then became rarer and atypical forms predominated. In the 5 cases in which the conjunctival secretion contained no pneumococci, none was found in the sputum, and the pneumonia was probably due to some other germ, probably the influenza bacillus.

115. **Registration of Respiratory Movements by Injection of a Gas.**—La Franca reports experiments on dogs with air or various gases injected into the pleura, recording on a drum the respiratory movements afterward as they were modified by the pneumothorax.

118. **Constriction Hyperemia.**—Rabbits and guinea-pigs injected with virulent germs and then having constriction applied to the limb above seemed to die more quickly than the controls; even a sublethal dose became fatal under these conditions. On the other hand, recovery was promoted by the constriction hyperemia when the infection was with germs of comparatively slight virulence. Injection of typhoid and cholera germs, with the part shut off from the arterial circulation by the constricting band, induced a local production of antibodies having a destructive action on the germs. The induced hyperemia is not always accompanied by an accumulation of leucocytes in the part; they may even be less numerous than elsewhere. It seems to be evident that a number of factors combine to produce the beneficial results observed under suitable conditions with the induced hyperemia; no single element is responsible for them.

Hospitalstidende, Copenhagen

February 2, LIII, No. 5, pp. 137-168

119 Treatment of Venereal Buboes by Arning's Method. (Om Bubonbehandling.) O. Haslund.

120 Four Cases of Pulmonary Tuberculosis with Positive Bacterial Findings but Slight, Doubtful Physical Signs. (Tilfælde af Lungetuberkulose med positivt Bacilfund, men tvivisomme stetoskopiske Forhold.) G. E. Permin.

121 Action of Digitalis and Strophanthus on the Frog Eye. (Digitalis- og Strofantusvirkningen hos Frøer.) P. Liebmann.

February 9, No. 6, pp. 169-200

122 Albumin and Tube Casts in Urine after Cold Bath in Health. (Om Albuminuri efter kolde Bade.) E. E. Faber.

123 Roentgen-Ray Examination of the Teeth. (Om Undersøgelse af Tænder ved Hjælp af Röntgenstraaler.) J. F. Fischer.

February 16, No. 7, pp. 201-224

124 Etiology and Pathogenesis of Serpiginous Corneal Ulcer. E. Jensen.

Nordiskt Medicinskt Arkiv, Stockholm

XLII, Surgical section, Nos. 1-2. Last indexed February 19, p. 663

125* Colloid Cystoma of the Ovary and the Colloid Degeneration of the Peritoneum after its Rupture, the So-Called Pseudomyxoma of the Peritoneum. (Ueber die Gallertkystome der Ovarien und die bei Ruptur derselben auftretenden gallertartigen Veränderungen des Bauchfells, s. g. Pseudomyxoma peritonei.) E. Ahlström.

126 *Mode of Action of Gastroenterostomy. (Wirkungsweise der Gastroenterostomie.) A. Pers.

127 *The Course and Outcome of Renal Tuberculosis in 33 Cases, in the Majority without Surgical Intervention. (Verlauf und Ausgang der Nierentuberkulose in einer Anzahl vorgeschrittener der Mehrzahl nach nicht operierter Fälle.) G. Ekehorn.

125. **Colloid Cystoma of the Ovary.**—Ahlström's article fills 276 pages and is accompanied by 7 plates and 8 tables of details regarding 81 cases from the literature, including 49 with microscopic findings. He also reports in detail 9 cases from his own experience with microscopic examination and 19 cases without this. The ovarian colloid cystoma is shown to be on the borderline between malignant and benign growths, and should no longer be regarded as inevitably benign. Proliferating epithelial metastasis, he asserts, is the principal feature of the process after perforation of the cystoma into the peritoneum. The proliferating epithelial cells of the colloid cystoma perforating the cyst-wall and invading the peritoneal cavity display a varying intensity of metastatic growth, but they seem to find an especially favorable medium in the omentum for almost malignant proliferation. In removing a primary colloid cystoma the colloid masses in the peritoneum should be wiped away, but it is not necessary to detach them with an instrument. The omentum should be resected wherever there are colloid deposits or changes in it. The frequent development of a cystoma in the other ovary, observed in nearly a third of the 32 cases in which the patients were traced for a number of years, suggests the importance of removing both ovaries. He was unable to discover any anatomic features as index of a specially energetic proliferating power on the part of the cyst epithelial cells; possibly the outcome may depend on the resisting power of the part of the peritoneum involved; the omentum seems to display much less resistance than other regions. Even in case of metastases, long survival may follow their excision. Implantation metastasis may occur even without naked-eye rupture. In about 27 per cent. both ovaries were affected, and in nearly 10 per cent. the second ovary became affected later. In about 20 per cent. the cystoma involved a ligament. Epithelial metastasis was evident in all of Ahlström's cases and in 57.1 per cent. of those on record. It was evident further that the colloid deposits exert a destructive action on connective tissue. One of his cases is, he believes, the first on record in which metastasis occurred in lymph glands outside of the abdominal cavity (above the diaphragm and in the groin).

126. **What Does a Gastroenterostomy Accomplish?**—Pers' previous communication on this subject was summarized in THE JOURNAL, Dec. 11, 1909, p. 2045.

127. **Course and Outcome of Renal Tuberculosis.**—Ekehorn has been studying the conditions and course of advanced tuberculosis in the kidneys in 33 cases with operative or autopsy findings in a number. Eight of the patients without operative treatment are still living, and 4 have entirely recovered so far as subjective symptoms are concerned; the urine is clear in one patient but there are signs of amyloid degeneration of the kidney in two cases notwithstanding the lack

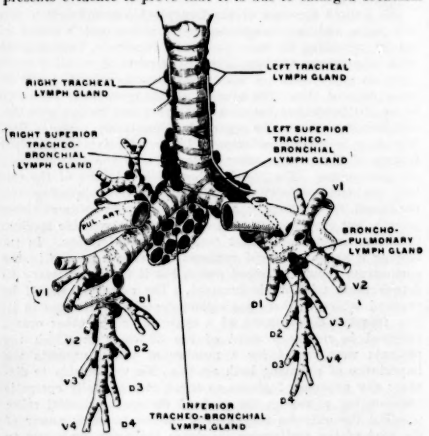
of subjective symptoms. All the patients who recovered were young, 5, 11, 19 and 19 years old respectively; the interval since averages 8 years. His material, he declares, confirms anew the importance of prompt nephrectomy as the only correct treatment. The relative improvement noticed in a number of cases after a time is deceptive. It means only that the tuberculosis in the kidney first attacked has reached the end of its active manifestations, the kidney then being largely or totally destroyed. But by this time there are usually manifestations of the disease elsewhere. Spontaneous arrest of the disease did occur in one of his cases after the kidney in question had become totally destroyed. The complete transformation of the kidney into a sterile sclerotic tissue with the flickering out of the last trace of vitality in the germs realized a kind of autonephrectomy after which the tuberculous lesions in the ureter and bladder below healed.

Ugeskrift for Læger, Copenhagen

February 24, LXXII, No. 8, pp. 199-234

128 *Dulness over the Right Apex of the Lung not due to Apical Lesions. (Om falsk Dæmpning over højre Lungespids.) H. I. Bing.

128. **Dulness Over the Right Apex Not Due to Apical Lesions.**—Bing calls attention to the dulness which increases as percussion is carried outward toward the side, and he presents evidence to prove that it is due to enlarged bronchial



The tracheobronchial and bronchopulmonary lymphatic glands seen from in front. The pointed (?) lymphatic glands and lymph vessels are not visible from in front. d_1 d_2, first and second dorsal bronchial branches; v_1 v_2, first and second ventral bronchial branches. (Sukiennikow, from Gray's Anatomy, Ed. 17.)

glands on the right side while the apex of the lung may be entirely normal. This is the dulness which Krönig found in mouth-breathers and which he ascribed to the adenoids and resulting disturbances. Bing shows that adenoids generally are accompanied by enlarged glands elsewhere, and especially in the bronchial chain, and that the real cause for the dulness is the peculiar arrangement of the bronchial glands on the right side where they are more numerous, higher up and occur in groups instead of being scattered isolated as in the left side. The dulness can be readily differentiated from that with tuberculous infiltration or retraction of the apex by its location, its distinctness under Goldscheider's, barely audible, "threshold" percussion and by the characteristic areas of dulness of different degrees in the front and back of the chest. He gives a number of illustrations of the areas involved and of the arrangement of the right bronchial glands, their preponderance, and the larger size and higher location of the bronchi on this side, his clinical experience confirming in every respect the arrangement of the tracheobronchial glands as depicted by Sukiennikow.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

REFRACTION AND HOW TO REFRACT. Including Sections on Optics, Retinoscopy, the Fitting of Spectacles and Eye-Glasses, etc. By James Thorington, M.D., Professor of Diseases of Eye in Philadelphia Polyclinic and College for Graduates in Medicine (1896-1909). Fifth Edition. Cloth. Price, $1.50 net. Pp. 324, with 251 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

THE PRACTICE OF SURGERY. By Walter G. Spencer, M.S., Surgeon and Lecturer on Surgery, Westminster Hospital, and George E. Gask, F.R.C.S., Assistant Surgeon and Demonstrator of Practical Surgery, St. Bartholomew's Hospital. Cloth. Price, $5.50 net. Pp. 1,234, with 707 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

REMEDIAL GYMNASTICS FOR HEART AFFECTIONS USED AT BAD-NAUHEIM. By Dr. Med. J. Hofmann and Dr. Med. L. Pohlman. Translated by John G. Garson, M.D., Edinburgh, Physician to Sanatoria and Bad-Nauheim, Eversley, Hants. Cloth. Price, 5 shillings. Pp. 128, with 42 illustrations. London: Swan Sonnenschein & Co., 1909.

DIE BESTÄTIGUNG DER KÜNSTLICHEN ZÜCHTUNG DES KREBSERREGERS. Sowie weitere geschwulststatistische. Mitteilungen über Familien.- Ehegatten- und endemischen Krebs. Von Dr. Robert Behla, Regierungs-und Geheimer Medizinalrat. Paper. Price, 1.50 marks. Pp. 50. Berlin, S. W. 48: R. Schoetz, Wilhelmstr. 10, 1910.

VERHANDLUNGEN DER BERLINER MEDIZINISCHEN GESELLSCHAFT AUS DEM GESELLSCHAFTSJAHRE, 1909. (Separat-Abdruck aus der *Berliner klinischen Wochenschrift.*) Herausgegeben von dem Vorstande der Gesellschaft. Vol. XL. Paper. Pp. 497, with illustrations. Berlin: Druck von L. Schumacher, 1910.

ATLAS ZUR MIKROSKOPISCHEN DIAGNOSTIK DER GYNÄKOLOGIE. Nebst einer Anleitung und erlauternden Text. Von Priv.-Doz. Dr. Rudolf Jolly, Oberarzt der königl. Universitäts-Frauenklinik zu Berlin. Paper. Price, 17.50 marks. Pp. 83, with 54 illustrations. Berlin: Urban & Schwarzenberg, 1910.

IONIC SURGERY IN THE TREATMENT OF CANCER. With a Chapter on Ionization in Surgical Tuberculosis and in Hemorrhoids. By G. Betton Massey, M.D., Attending Surgeon to American Oncologic Hospital. Cloth. Price, $3. Pp. 239, with 80 illustrations. New York: A. L. Chatterton Co., 1910.

A SYSTEM OF OPERATIVE SURGERY. By Various Authors. Edited by F. F. Burghard, M.S., Teacher of Operative Surgery in King's College, London. In Four Volumes. Vol. III. Cloth. Price, $10. Pp. 764, with 381 illustrations. New York: Oxford University Press, 1909.

THE RAT AND ITS RELATION TO PUBLIC HEALTH. By Various Authors. Prepared by Direction of the Surgeon-General, P. H. and M.-H. S. Paper. Pp. 254, with illustrations. Washington: [Superintendent of Documents] Government Printing Office, 1910.

DISEASES OF THE STOMACH AND INTESTINES. By Robert C. Kemp, M.D., Professor of Gastro-intestinal Diseases in the New York School of Clinical Medicine. Cloth. Price, $6 net. Pp. 766, with 286 illustrations. Philadelphia: W. B. Saunders Co., 1910.

MODERN METHODS OF STREET-CLEANING. By George A. Soper, Ph.D., Member American Society of Civil Engineers. Cloth. Price, $3. Pp. 201, with illustrations. New York: The Engineering News Publishing Company, 1909.

THIRTY-SIXTH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF HEALTH OF THE STATE OF MICHIGAN. For the Fiscal Year ending June 30, 1908. [F. W. Shumway, Secretary, Lansing, Mich.] Cloth. Pp. 222.

DUNKELFELDBELEUCHTUNG UND ULTRAMIKROSKOPIE IN DER BIOLOGIE UND IN DER MEDIZIN. Von N. Gaidukov. Paper. Price, 8 marks. Pp. 84, with 18 illustrations. Jena: Gustav Fischer, 1910.

TWENTIETH ANNUAL REPORT OF THE VISITING NURSE ASSOCIATION OF CHICAGO. Year Ending Dec. 31, 1909. Office, Room 1408 Unity Building, 79 Dearborn St. Paper. Pp. 48.

AN ANALYSIS OF SOME PHASES OF AMERICAN MORTALITY STATISTICS FOR NINE YEARS, 1900-1908. By Edward B. Phelps, M.A., Editor, the *American Underwriter,* of New York City. Paper. Pp. 14.

THE POCKET CLINICAL GUIDE. By James Burnet, M.D., Fellow of the Royal Society of Medicine, Edinburgh. Cloth. Price, 1 shilling 6 pence. Pp. 127. Edinburgh: John Currie, 16 Teviot Place, 1910.

TWENTY-FIFTH ANNUAL REPORT OF THE ADIRONDACK COTTAGE SANITARIUM, SARANAC LAKE, N. Y. November, 1909. Paper. Pp. 24, with illustrations. [With Medical Supplement, pp. 16.]

PROCEEDINGS OF THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION. At the Sixty-fourth Annual Meeting held in Cincinnati, Ohio, May 12-15, 1908. [C. W. Pilgrim, Secretary, Poughkeepsie, N. Y.] Paper. Pp. 479, with illustrations.

TRANSACTIONS OF THE RHODE ISLAND MEDICAL SOCIETY. Vol. VII. Part VI. [Stephen A. Welch, Secretary, 253 Washington St., Providence.] Paper. Pp. 883, with illustrations.

TWENTY-THIRD ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF THE STATE OF OHIO for the Year ending Dec. 31, 1908. [C. O. Probst, Secretary, 1909.] Cloth. Pp. 352.

A HISTORY OF THE LONDON HOSPITALS. By E. W. Morris. Cloth. Price, $1.75 net. Pp. 296, with illustrations. New York: Longmans, Green and Co., [1910].

PROCEEDINGS OF THE NEW YORK PATHOLOGICAL SOCIETY. December, 1909; January, 1910. Paper. Pp. 160. New York: K. M. Vogel.

THE LAW OF THE GENERATION OF SEXES AT WILL. By Louis Dechmann, Seattle, Wash. Paper. Price, 10 cents. Pp. 12.

ANNUAL REPORT OF THE CORONER OF THE COUNTY OF PHILADELPHIA, PA. For the Year ending 1909. Paper. Pp. 22.

THE EVOLUTION OF RELIGION. By William A. Hinckle, M.D., Peoria, Ill. Cloth. Price, 75 cents. Pp. 161.